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Commonwealth of Massachusetts Information Technology Division



Year 2000 Awareness Program

March 1998

T. Louis Gutierrez
Chief Information Officer

Val Asbedian
Director, Strategic Planning Group

Prepared By:

ITD Year 2000 Program Management Office

INTRODUCTION

In this binder is a collection of Year 2000 outreach materials representative of the Commonwealth's efforts to raise awareness of the issue throughout the state: at the agency level, as well as at the local city and town level.

The Information Technology Division (ITD) coordinates a Year 2000 Program Management Office (Y2K PMO) consisting of a project manager and five additional full-time staff people. This group was established to:

- Ensure accurate monitoring of the Commonwealth's progress in meeting the Year 2000 challenge;
- Identify risk areas and risk mitigation activities;
- Disseminate lessons learned to state agencies; and
- Serve as a Year 2000 resource to state agencies and departments in the three branches of government.

The PMO has been involved in numerous Year 2000 activities:

- One-on-one interviews with agency Year 2000 coordinators to identify Commonwealth mission critical and essential systems and determine the status of the remediation effort. A summary of the interview results is included here in Chapter 5.
- Sponsoring monthly User Group meetings and quarterly Year 2000 Days. The User Group meetings provide a forum for the exchange of information between Commonwealth entities. Year 2000 Days provide agencies with the opportunity to learn what vendors and commercial groups are doing regarding Year 2000. Information related to the User Groups (including meeting minutes) and Year 2000 Days can be found in Chapters 8, 9, and 10.
- Outreach Efforts. The PMO disseminates information to agencies, mostly via e-mail, to agencies approximately twice a month. This information includes notices of upcoming meetings, publications, and frequently electronic copies of material the PMO has prepared for agency use. The PMO's distribution list is presented in Chapter 11. The PMO also works with municipal organizations and agencies that are liaisons to municipal and local organizations to raise Year 2000 awareness and distribute practical information. A list of the most recent outreach activities is provided in Chapter 7.
- Research and dissemination of information. The PMO has produced reference material for use by the agencies. In addition to the Year 2000 home page, <http://www.state.ma.us/y2k/>, the PMO has written a white paper on testing PC BIOS, has developed a sample Year 2000 Project Plan and a sample Year 2000 Test Plan, has created a letter and spreadsheets for agency use to contact vendors and landlords regarding Year 2000 compliance, and has published a second edition of *Year 2000 Compliance, Meeting the Challenge*. Copies of both editions of *Meeting the Challenge* and some of the other documents produced by the PMO are included in Chapters 14 and 16 through 20.

ITD's outreach efforts have been supported by other agencies within the Commonwealth: the Operational Services Division (OSD) now requires that all contracts have a standard Y2K clause; the Budget Bureau required agencies to submit separate detailed plans for Year 2000 remediation with their annual spending plans; and, Year 2000 issues have been prominently covered in ITD's quarterly bulletin since the Winter 1997 issue.

A complete list of all the Chapters in this book is provided on the following page.

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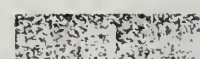
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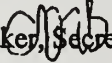


THE COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE FOR
ADMINISTRATION AND FINANCE
STATE HOUSE • ROOM 373
BOSTON, MA 02133

ARGEO PAUL CELLUCCI
GOVERNOR

CHARLES D. BAKER
SECRETARY

TEL: (617) 727-2040
FAX: (617) 727-2779

To: All Secretaries and Department Heads
From: Charles D. Baker, , Secretary, EOAF
Subject: Year 2000 Compliance
Date: September 29, 1997

We face a unique challenge in the history of Commonwealth operations – a turn of the century, coupled with heavy reliance on automated operational systems.

Therefore, effective immediately, it is ordered that:

1. Uninterrupted turn-of-century service delivery is each agency's top operational planning priority.
2. The management of each agency of the Commonwealth is responsible for assessing its Year 2000 preparedness and bringing its systems into compliance, or devising replacement and contingency plans for insuring smooth operations through the turn of the century, and having such assessments and plans committed to writing.
3. All purchases by Commonwealth agencies of new software, systems, enhancements or equipment shall be Year 2000 compliant.
4. New acquisitions which do not address *specifically identified* Year 2000 deficiencies in older systems should not be put forth as "Year 2000" initiatives.

Agencies are directed to review planned and ongoing technology initiatives in light of this directive and suspend all such initiatives which detract from Year 2000 preparedness efforts, other than those specifically mandated by statewide directives or required by law.

The Information Technology Division, through its Year 2000 Project Management Office, will continue to offer assistance to agencies in their Year 2000 compliance efforts. The Operational Services Division is available to assist with technology procurement matters related to Year 2000 compliance. Please feel free to contact these agencies.





The Commonwealth of Massachusetts
Executive Office for Administration and Finance
Office of Management Information Systems

One Ashburton Place • Room 801 • Boston • Massachusetts • 02108

WILLIAM F. WELD
GOVERNOR

ANGELO PAUL CELLUCCI
LIEUTENANT GOVERNOR

CHARLES D. BAKER
SECRETARY

Telephone: (617) 973-0975
Facsimile: (617) 727-3766

To: Interested Parties

From: Louis Gutierrez, Chief Information Officer
Jim Bradford, Chief Operations Officer

Date: March 11, 1996

Re: OMIS Technical White Paper

OMIS is committed to the process of keeping information technology managers in the Commonwealth informed on major issues impacting IT project planning, costs and implementation. One of our goals is to convey to Commonwealth departments an awareness to impending IT issues by distributing informative technical white papers.

The technical white paper attached for your review is related to the impact that year 2000 may have on your IT software and hardware. We have chosen this topic because the window of opportunity for a year 2000 conversion is closing in on a project deadline that cannot be changed.

We welcome your input on this issue and value your experience with providing effective solutions and pointing out potential problem areas that may not have surfaced.

The technical white papers are being coordinated by OMIS, Strategic Planning Bureau. For more information, please contact Roy Bean at 973-0805.

OMIS Technical White Paper

Year 2000

The turn of the century is less than **four short** years away, a little over **1,300** days.

Are we, as Commonwealth Information Technology Managers, still procrastinating year 2000 modifications to our software and hardware components? Certainly, the year 2000 modification is technically simple to correct, however, the modifications are labor-intensive and will require time and effort to undertake. If Information Technology Managers have not done so already, now is the time to develop an implementation plan to solve the year 2000 dilemma for their organization.

OMIS would like to assist Information Technology Managers with year 2000 planning by pointing out several key areas to investigate for potential problems. Summarized below are potential problem areas to research. A more detailed description of each area can be found on the Internet at the following address: <http://www.year2000.com>

Leap Year: The rules governing a leap year states that not only the year be divisible by four, but if the year is a century mark, it must be divisible by 400 as well.

Vendor Products: Ensure that vendor products support four-digit year format and any interfaces to those products are in compliance.

Programs: Review date references in software source programs, Job Control Language (JCL), Procs, ISPF Dialogs, TSO Clists, REXX, SQL, Sorts and data files. Carefully check date calculations, some programs are currently doing calculations based on a date(s) in the future. These programs could be erroneously calculating against the year '00' right now!

Reports and Screens: Ensure that data input screens conform to the new date format. Review report date fields and also output screens for the use of four digit year.

PC's: Many PC's cannot handle the transition to the year 2000. The PC may reset the system date to the BIOS date when January 1, 2000 clocks in. This can be tested by setting the system date on your PC to December 31, 1999 11:55, shut off the PC and wait 10 minutes. Power up the PC and check the date, it may have reverted to the BIOS date.

Data: Expansion of a two-digit year to four digits most likely will require a data file conversion and an increase in disk utilization.

Testing: Rigorous testing must be performed, not only will programsabend, but some will appear to perform normally due to date comparisons and calculations not causing an error.



The Commonwealth of Massachusetts
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Information Technology Division

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Telephone: (617) 873-0090
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August 25, 1997

TO: Cabinet Secretaries and Agency Heads
Judicial Branch Administrators
Presidents of State and Community Colleges,
Legislative Data Processing Directors
Constitutional Officers

This year, in the spending plan package issued by the Budget Bureau for FY1998/FY1999, is a special form regarding "Year 2000 System Compliance Costs".

I am writing separately to encourage your careful attention to this form.

As of the date of this letter, there remain only 583 state business days until December 31, 1999, and only 457 state business days until June 30, 1999 (Fiscal Year 2000). In this short timeframe, your agency will need to inventory its various systems (computer, telephone, etc.) and their data interfaces with other parties, determine whether these systems were programmed to properly handle the century change, repair non-compliance, and thoroughly test the work. System errors attributable to systems which do not properly handle the century date change have already been encountered at some agencies.

The Information Technology Division can provide information to you and your staff in this matter. In particular, ITD has established a Year 2000 Program Management Office to monitor the Commonwealth's progress in meeting the Year 2000 challenge, and to coordinate and facilitate agency efforts. ITD also sponsors a Year 2000 Users Group and maintains an Internet information site at <http://www.magnet.state.ma.us/y2k/>

But each agency of state government needs to take on the responsibility of insuring smooth and uninterrupted operations through the turn of century. Careful attention to the financial requirements of this obligation is an important component of this Fiscal Year's spending plan process. If you or your staff have questions or need assistance in this matter, please feel free to contact Val Asbedian, ITD's strategic planning director, at 973-0763.

Sincerely,

T. Louis Gutierrez,
Chief Information Officer

Carpenito, Marie

From: Carpenito, Marie
Sent: Friday, September 19, 1997 11:25 AM
To: DL - ITCC
Subject: IT Coordinating Council Meeting

Louis Gutierrez is calling a meeting with the IT Coordinating Council to discuss

- 1) year 2000
- 2) revised technical standards

The meeting will take place on Tuesday, September 23 at 1:30 p.m. in ITDs 801 conference room at One Ashburton Place. If you are unable to attend, it is suggested that a representative attend on your behalf.

Please confirm your attendance with me no later than Monday, noon. Thank you for your attention to this request.

Marie Carpenito

Information Technology Division
(617)973-0846

THE SELLER DEPARTMENT AGREES TO ADHERE TO STATEWIDE TECHNOLOGY STANDARDS*, INCLUDING THE FOLLOWING, UNLESS EXEMPTIONS ARE REQUESTED IN WRITING BY SELLER AND GRANTED IN WRITING BY THE STATE'S DIRECTOR OF INFORMATION TECHNOLOGY:

SELLER DEPARTMENT WILL HAVE COMPLETED ITS YEAR 2000 COMPLIANCE ASSESSMENT AND BE ENGAGED IN REMEDIATION EFFORTS (IF NEEDED)~~HAVE A WRITTEN PLAN FOR INSURING THE SMOOTH OPERATION OF ALL ITS SYSTEMS THROUGH THE TURN OF THE CENTURY (YEAR 2000)~~. PRIOR TO UNDERTAKING OTHER NEW INVESTMENT INITIATIVES.

SELLER DEPARTMENT WILL USE TCP/IP AS THE STANDARD NETWORK PROTOCOL FOR ALL NETWORKS PROCURED OR UPGRADED THROUGH CAPITAL FUNDS.

SELLER DEPARTMENT PC ACQUISITIONS WILL:

- (A) CONTAIN PENTIUM PROCESSOR OR GREATER;
- (B) RUN AT 200MHZ CLOCK SPEED OR GREATER;
- (C) HAVE 2GB HARD DRIVES OR LARGER;
- (D) CONTAIN ~~24MB~~ 32MB OF RAM OR MORE;
- (E) RUN ~~32 BIT IMPLEMENTATIONS OF THE MICROSOFT WINDOWS OPERATING SYSTEM (WINDOWS 95, WINDOWS NT WORKSTATION 4.0)~~ OR GREATER.

SELLER DEPARTMENT WILL NOTIFY THE COMMONWEALTH'S INFORMATION TECHNOLOGY DIVISION IN WRITING PRIOR TO FINALIZING DESIGN DECISIONS ON ANY PUBLIC KEY CRYPTOGRAPHY APPLICATIONS, INCLUDING THE USE OF SMART-CARDS OR OTHER PHYSICAL TOKENS.

SELLER DEPARTMENT WILL UTILIZE THE COMMONWEALTH'S COMMUNICATIONS BRIDGE INFRASTRUCTURE FOR INTER-DEPARTMENTAL NETWORKED SYSTEMS EXCHANGES AMONG EXECUTIVE BRANCH DEPARTMENTS.

SELLER DEPARTMENT AGREES TO NOTIFY THE COMMONWEALTH'S INFORMATION TECHNOLOGY DIVISION IN WRITING PRIOR TO FINALIZING ANY SYSTEM DESIGN WHICH REQUIRES EXTERNAL PARTIES (VENDORS, CONSTITUENTS, CITIES AND TOWNS, ...) TO OWN OR PROCURE ANY PARTICULAR SOFTWARE IN ORDER TO INTERFACE TO SELLER DEPARTMENT'S SYSTEMS.

SELLER DEPARTMENT: _____

AUTHORIZED SIGNATURE: _____
(IT DIRECTOR)

PRINT NAME: _____

TITLE: _____

DATE: _____

-* STATEWIDE TECHNOLOGY STANDARDS ARE MAINTAINED BY THE INFORMATION TECHNOLOGY DIVISION, OFFICE OF TECHNOLOGY PLANNING/STRATEGIC PLANNING GROUP AND CAN BE OBTAINED —
—UPON REQUEST OR BY ACCESSING THE FOLLOWING WEB SITE ADDRESS:—

[HTTP://WWW.STATE.MA.US/ITD/STANDARD](http://WWW.STATE.MA.US/ITD/STANDARD)

2000 Questions

BY KATHLEEN MACONE

When State Auditor Joseph DeNucci issues a Year 2000 readiness report next month, it will laud directors of some state agencies for superb preparedness while showing others have given little thought to the havoc the new millennium can wreak on computers.

The report will show a "mixed bag" of "good news and bad news," said Glenn Briere, a spokesman for the state auditor's office.

"Our concern is that a lot of agencies have not given this much thought and are not very well prepared," Briere said after disclosing that only 400 of 637 surveys sent out to state agencies by the auditor's office have been completed in six months.

The new millennium presents a problem because computer systems generally use two digits to represent the year. The system could confuse the year 2000 with 1900. Since dates are so pervasive in computer applications, this could wreak havoc on the state's computer systems.

Briere estimates state and local government agencies will spend \$100 million making the necessary conversions.

State officials are using a triage system to determine critical and non-critical systems in all agencies. Louis Gutierrez, director of the Information Technology Division, believes reprogramming efforts on the state's "blockbuster systems" are well in hand. Those key areas include the Department of Revenue, Department of Employment and Training, Medicaid, accounting, payroll and human resources, Registry of Motor Vehicles, and welfare.

"The things that cause problems are these huge systems. That's where you've got to start because you need huge lead times,"

Gutierrez said.

While state officials have been treating this problem seriously for 18 months, the Commonwealth has been buying new technology to replace the old. Negotiators in the Operational Services Division are dealing with computer suppliers to make sure these new high-tech tools will not become obsolete too quickly.

"Massachusetts, through the Procurement Department, has done a very good job in getting the vendors to sign Year 2000 agreements," Gutierrez said.

Big players like UNISYS, IBM, Digital Equipment Corp., as well as smaller technology vendors, have had to guarantee their products will work into the new millennium. In some cases they have had to provide additional proof as well as documentation that they are insured if their systems fail.

"People everywhere are concerned about the liabilities, but we tried to be very direct and say they had a responsibility," Gutierrez said.

Getting big companies to sign these agreements was not easy, Gutierrez said. He said the Operational Services Division has been "very aggressive" in this area. "There's some very effective contractual diligence that OSD has undertaken," Gutierrez said.

Fixing the problem has many solutions, from replacing entire computer systems to changing two-digit dating to four-digit dating. For the most part, the state has opted for reprogramming. There are a few exceptions. In those cases, such as payroll and human resources data, where major systems were not in place, Gutierrez said.

"For practical purposes, it doesn't make sense to throw out these huge systems," he said.

A leader in this area has been the Department of Revenue, which has a "crisp program" that is "well thought out," Gutierrez said.

Anthony DelGrosso, leader of the Revenue Department's Year 2000 program, said he plans to have his agency's computers ready for the millennium by the end of next year.

"I'm fortunate that my management takes this very seriously," DelGrosso said.

The Department of Revenue has eight full-time and 17 part-time state employees, along with private contractors, working on this problem, DelGrosso said. In a year, the 1,500-employee Revenue Department will have 70 workers dealing with the Year 2000 problem. Private contractors will be at 20 before the year is out.

In an environment where deadlines are extended routinely, there are no extensions on Year 2000 readiness. "The problem with the Year 2000 is we didn't pay enough attention to it early on so that we could all get down to this slowly," said Val Asbedian, director of Strategic Planning Group of the Information Technology Division.

There have been a number of methods used by state officials to stress to its systems managers that Year 2000 is something they have to take seriously. A Program Management Office has been established. The Information Technology Division has hired Science Applications International Corp. to lend its expertise and support. So-called awareness days on the topic have been held by the division, with the next one scheduled for Oct. 2.

Budgets filed this month had to contain figures on Year 2000 costs. Department heads have had to sign statements saying they have dealt with the issue or that the budget being filed contained these costs.

Information is available from Year 2000 coordinator Marcia King, who can be reached at (617) 973-0711, or visit the Year 2000 Web site at <http://www.state.ma.us/y2k/>.



at Clinton at his news conference last night.

AP PHOTO

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Rhode Island, the task of keeping the team in Foxborough seems difficult.

While Kraft was meeting with officials here, Coppola had a quiet meeting with legal counsel in Boston to put the finishing touches on legislation to provide such things as road and lighting improvements in the vicinity of Route 1.

"The infrastructure is to enhance around the stadium," Coppola said. "It would not be helping beyond infrastructure. What happens between the town Industrial Finance Agency and the private financing would happen with or without a legislative bill."

Coppola said the funding would not be a loan from the town and the Industrial Finance Agency would only be a mechanism for Kraft to access financing. "The town has no exposure," he added. "There's no moral obligation."

Coppola said he did not know how much the agency could provide. "We've yet to get into all that. It has no bearing on the bill," he said.

State to exceed bond cap by \$100m this year, new

Plan comes as Mass. faces threat of cut in highway funds, growing pressure for stadium

By Leslie Miller
ASSOCIATED PRESS

BOSTON — As governor, William Weld often bragged about restoring discipline to state spending. A prime indicator was the \$900 million annual limit he set on state borrowing.

Now, however, Wall Street is raising an eyebrow as the state plans to blow the cap this year and the next by \$100 million annually.

The plan, outlined in the state's recent bond prospectus, comes at a pressure-filled time for the state.

Congress is threatening to cut hundreds of millions of dollars in highway funding to Massachusetts, and pressure is building for at least some state help in building a stadium for the New England Patriots.

"There's a football stadium, a convention center, the Central Artery Project. We've been very much aware of the capital pressures the Commonwealth has been dealing with," said Steven Hochman, senior vice president with Moody's Investors Services in New York City.

There's more.

There's \$25 million for a Basketball Hall of Fame in Springfield; \$17 million for renovation of the civic center in Worcester; \$200 million for the redevelopment of Fort Devens; \$685 million for courthouse construction; \$375 million to renovate public housing; and \$73 million to help cities and towns with wastewater treatment.

And those are just projects authorized in May, June, and July. All told, the Legislature has authorized \$15 billion for projects. But it's up to the executive branch to select which projects get funded each year.

And while the state is on the verge of exceeding the \$900 million cap, the Legislature is even now considering another \$300 million housing bond bill and a \$160 million library bond bill.

The problem is not so much willingness to keep spending check, but the state's ability to do said Representative Frank Hynes. The Marshfield Democrat serves vice chairman of the Long-Term Debt Committee, a special House committee created this year to try control the state's debt.

"You can't be all things to all people," he said. "There are some very difficult choices that have to be made by government."

Skating rinks need repair, coastal erosion needs attention, landfill need to be capped and dams need to be shored up, he said.

"There's a willingness to keep the ceiling without the pressure to blow off the ceiling," said Hynes.

But, he said, the pressure mounting with news that the state may cut hundreds of millions of dollars from the Big Dig project — funding the state will somehow have to make up.

Transportation spending helped push the state beyond its credit limit last year, with \$650 million going to statewide road and bridge construction as well as the Central Artery Project.

For the future, state transportation officials plan on receiving \$45 million a year — at the very minimum — in federal funding for the Big Dig. But right now the House only wants to authorize \$392 million annually for Massachusetts.

On the positive side, said Moody's Hochman, the economy has been booming and the state has kept its operating budget under control.

The state's current bond rating is A-1, which is a vast improvement over what it was when Weld took over from former governor Michael S. Dukakis in 1991. But it's still below the national average of A.

Significant Y2K Events

DATE		EVENT
3/11/96		L. Gutierrez, J Bradford Letter to 'Interested Parties' with Y2K White Paper
April '96		Open/Close Meeting; L. Gutierrez first mentions Y2K and asks agencies to start thinking about it
7/1/1996 (effective)		Legislature creates position of Chief Information Officer for Executive Departments of the Commonwealth
Summer '96		SPG Staff Members interviewed blanket vendors with Y2K experience
August '96		State Auditor's Office sends Y2K questionnaire in their audit package
February '97		Governor Files Y2K Supplemental Budget Report
2/26/97		CIO presents Year 2000 Testimony to House and Senate Committees on Science and Technology
3/1/97		Director of Strategic Planning Group (SPG), Val Asbedian, came on board
3/1/97		CIO states importance of Year 2000 compliance (Message from the CIO in Winter '97 IT Bulletin)
3/4/97		First Users Group Meeting (meetings held monthly since then)
April '97		Solicitations published for bids to establish the Y2K Program Management Office (PMO)
April '97		Year 2000, Meeting the Challenge, Volume 1 published
April '97		Year 2000 standards released
4/2/97		First Year 2000 Awareness Day (Year 2000 Days held quarterly since)
4/2/97		Lt. Gov. Cellucci emphasizes the importance to the Commonwealth of meeting Year 2000 challenge at April Awareness Day
4/9/97		Sec. Baker makes statement at Open/Close Meeting regarding Year 2000 in the state.
4/18/97		Auditor sends out Year 2000 survey to agencies
May '97		Bids to establish the Y2K PMO reviewed
5/1/97		Auditor begins tabulation of survey results
6/9/97		PMO Established; SAIC awarded contract
6/12/97		Awareness Day
6/24/97		OSD conducts vendor meeting to describe required Year 2000 compliance from vendors on Commonwealth blanket contract
Jul-Sept '97		PMO conducts agency interviews
7/1/97		Users Group Meeting
7/11/97		OSD issues letter listing Blanket vendors who have signed Year 2000 compliance warranty agreement
7/18/97		Fiscal Affairs Division (FAD), formerly the Budget Bureau, sends Spending Plans to agencies; includes one page on Year 2000 spending
8/25/97		CIO sends letter to agencies re: their Year 2000 budgets
8/29/97		\$7m Supplemental Budget for Y2K signed into law
9/11/97		Revised Interagency Service Agreement for Year 2000 compliance; revised by L. Gutierrez
9/17/97		FAD begins tabulation of Y2K spending plans

Significant Y2K Events

DATE		EVENT
9/29/97		Letter to all Secretaries and Department Heads from Charles Baker mandating Y2K as top priority
9/30/97		Louis Gutierrez testifies before the Senate and House Science and Technology Committees to provide an update on the progress of the state's Year 2000 readiness
10/9/97		Year 2000 Day
10/10/97		OSD releases updated list of vendors who signed Y2K warranty agreement
10/14/97		Users Group Meeting
10/17/97		<i>Year 2000, Meeting the Challenge, Second Edition</i> released
10/17/97		OSD publishes updated list of vendors who have signed Y2K warranty agreement
11/1/97		Round 2 Interviews started
11/4/97		Users Group Meeting
12/2/97		Users Group Meeting
12/5/97		Y2K PMO participated in Boston Millenium Association Meeting
1/6/98		Standard Letter to Landlords released for use by agencies
1/9/98		V. Asbedian participated in CITE meeting to raise Y2K awareness in colleges
1/13/98		Users Group Meeting
1/13/98		<i>ITD Data Center Agency Year 2000 Test Support Manual</i> released
1/23-24/98		V. Asbedian & M. King participated in Mass Municipal Association (MMA) meeting to raise Y2K awareness at local government levels
2/3/98		Auditor's Survey Report Released
3/3/98		Users Group Meeting

Y2K PMO Interviews

The Y2K PMO is currently monitoring Year 2000 compliance efforts for 170 agencies in the Commonwealth. This is an increase over the 137 agencies interviewed in the previous quarter. The agencies are classified as shown in Table 1.

Table 1. Y2K PMO Agency Interviews for Jul. -Dec. 1997

Agency Type	Number of Agencies	Number of Agencies
	Jul. - Sep. 97	Oct. - Dec. 97
A&F	20	20
Constitutional Offices	6	6
Consumer Affairs	10	10
Economic Development	7	7
Education	1	2
Elder Affairs	1	1
Environmental Affairs	7	7
Executive Offices	3	3
General Court	2	3
Health and Human Services	16	16
Higher Education	7	33
Housing	2	2
Independent Agencies	18	21
Judiciary	4	5
Labor Development	10	10
Public Safety	19	20
Transportation & Construction	4	4
Total	137	170

Presentations by the ITD Y2K PMO

1. Monthly User Group Meetings

✍ Held monthly since June 1997

2. Quarterly Year 2000 Commonwealth Days

✍ First one held in April 1997

3. Y2K Project Launch Workshop

✍ Held in September 1997

✍ Half day seminar on developing project strategy and plan for Agency Year 2000 projects

4. In Planning Stage.....Testing PC BIOS for Year 2000 Compliance

✍ Two hour step-by-step how-to workshop to be held this month

Outreach Effort to Municipalities and Local Organizations

1. Participation in Coordinators of Information Technology and Education (CITE) meeting

Val Asbedian provided presentation on January 9, 1998 to raise Y2K awareness

2. Participation in Massachusetts Municipal Association (MMA) meeting

Val Asbedian and Marcia King provided presentation on January 23-24, 1998 to raise Y2K awareness at local government levels

3. Local Banking Industry

Division of Banks surveyed Massachusetts financial institutions regarding Y2K and is conducting awareness campaign throughout Commonwealth

4. US-based Insurance Companies

Division of Insurance surveyed US based insurance companies doing business in Massachusetts regarding Y2K awareness and compliance

5. Chiefs of Police and Sheriffs

Department of Public Safety provided Massachusetts Chiefs of Police and Sheriffs with list of resources available to them including ITD's *Year 2000 Compliance, Meeting the Challenge, Second Edition*.

6. Cities and Towns

Auditor's Office preparing packet including *Year 2000 Compliance, Meeting the Challenge, Second Edition*, PC BIOS White Paper, review of Microsoft's Year 2000 strategy and Auditor's Y2K Survey Results report to send to all Commonwealth Cities and Towns.

1. The following information is being provided for your information:

2. Subject: [Redacted]

3. The following information is being provided for your information:

4. The following information is being provided for your information:

5. The following information is being provided for your information:

6. The following information is being provided for your information:

7. The following information is being provided for your information:

Commonwealth of Massachusetts Year 2000 User Group Meetings

The Information Technology Division's Year 2000 Program Management Office (Y2K PMO) has been holding monthly Year 2000 User Group meetings for Commonwealth personnel involved in the Year 2000 effort. The purpose of the User Group Meetings is to exchange Year 2000 information and share lessons learned. Fourteen people from eight agencies attended the first meeting in March 1997. At a more recent User Group meeting, there were 62 people from 39 agencies. Topics at the meetings generally include an update on PMO activities and presentations from agencies regarding their solution and/or approach to Year 2000 projects and problems. The following is a list of the User Group Meetings held to date. Minutes of the meeting are attached for those marked with an asterisk.

1997:

March 4, 1997
April 8, 1997
May 13, 1997
June 3, 1997
July 1, 1997
August 12, 1997*
September 2, 1997*
October 14, 1997*
November 4, 1997*
December 2, 1997*

1998:

January 13, 1998*
February 10, 1998*
March 3, 1998*

Y2K Users Group Update from ITD Y2K PMO

We were very pleased by the turnout for the Mass Government Y2K Users Group meeting held August 12, 1997. Highlights from the meeting are as follows:

1) Update from ITD Y2K Program Management Office (Daylia Vaughan)

The Y2K PMO has been established to 1) support the CIO's need to understand, monitor and report the Commonwealth's progress in meeting the Year 2000 challenge; 2) promote best practices; and 3) coordinate and facilitate agency efforts. The current focus is determining compliance status of the various agencies and the mission critical systems. To do this, the PMO will be interviewing the (approximately 160) state agencies.

2) Division of Employment & Training (Dick Burke)

DET began its Year 2000 effort in November 1996. They have now completed (and documented) their Year 2000 assessment of mainframe applications, developed a schedule for achieving compliance, and begun remediating many of these systems. All work will be performed using in-house staff. All systems are on schedule to be remediated, tested, and redeployed by December 1998.

DET credits its progress to its agency-wide approach that early on established a steering committee comprised of representatives from the agency departments, defined committee roles and responsibilities, established a Y2K compliance team, and developed an agency awareness methodology.

Their assessment methodology included the identification of departmental liaisons, the development of questionnaires to help collect assessment information, and a follow-up round of interviews. In addition to the mainframe applications, DET included 4 categories for assessment: PC-based applications, hardware, physical plant & office equipment, and external interfaces (i.e., external customers). They are currently working on a plan and schedule for bringing these additional components into compliance.

Key lessons learned to date include: 1) the time/effort required for testing, managing external interfaces, and upgrading PC applications was underestimated; 2) the Y2K effort competes in priority with other IT projects; 3) staff resources are dwindling due to lay-offs and voluntary retirement; and, 4) Y2K modifications must be implemented in conjunction with modifications required by legislation.

3) Update from Operational Services Division (Jerry Polcari)

OSD is proceeding with efforts to ensure all products and services purchased on IT statewide contracts are Year 2000 compliant. All vendors that have executed an acceptable Year 2000 warranty are listed on the OSD home page at www.magnet.state.ma.us/osd/memo/memotoc.htm

4) MMARS Update (Susan Foss)

The MMARS project is on target for Feb. 19, 1998 and Susan is in the process of sending out the new record layouts. Final record layouts should be available in September.

5) Y2K Supplemental Budget (Marcia King, ITD)

The Supplemental Budget has been increased from \$5M to \$9M. It has been passed by both the House and Senate but under different names. It should be resolved fairly quickly in conference once the legislature returns from vacation.

The Y2K PMO is working with DET to make available DET materials to other agencies which are launching a Year 2000 project. Please reply if you would like a copy of these materials.

The next Users Group meeting will be held Sept 2 (the Tuesday after Labor Day) and will focus on PC issues. To ensure we have reserved a large enough room, please reply if you are planning to come.

If you received this message and you are not involved in the Year 2000 effort for your agency, please let Bob Lebel know by e-mail or by calling me at 973-0913.

Y2K PMO Memorandum

Date: September 10, 1997
To: Val Asbedian
CC: PMO Team and Users Group
From: Daylia Vaughan
Re: Minutes of Mass. Government Y2K Users Group for September 2, 1997

Minutes of Mass. Government Y2K Users Group for September 2, 1997

Attendees:

Admin Agency Dev. Disabilities	House of Representatives
Board of Medical Registration	ITD
FAD (Budget Bureau)	Low Level Radio. Waste
Dept. of Employment & Training	Mass. Highways
Dept. of Environmental Protection	Mass. Housing Finance Agency
Dept. of Housing & Com Dev	Mass. Rehab. Comm
Dept. of Mental Health	Merit Rating Board
Dept. of Public Health	MWRA
Dept. of Trans. Assistance	Office of Film
Dept. of Youth Services	Parole Board
Div. of Health Care Finance	PERA (retirement board)
Div. of Medical Assistance	Soliders Home - Chelsea
Div. of Standards	Soliders Home - Holyoke
DOR	UMass, Presidents Office

1) Update from ITD Y2K Program Management Office (Daylia Vaughan)

The Y2K PMO is currently conducting interviews of state agencies to ascertain the compliance status of the various agencies and their mission-critical systems. This effort, which involves about 150 agencies and which will be completed by the end of September, is also helping the PMO 1) establish communications with agencies, 2) determine areas of concern, and 3) identify potential risk areas.

Approximately 50 interviews have been completed to date. Of these 13 are compliant, nearly compliant, or have planned and launched their Y2K programs. Sixteen agencies are very late getting their programs launched. (The "Meeting the Challenge" book published last April targeted May 31, 1997 as the deadline for completing inventory and assessments and July 31, 1997 as the deadline for documenting project plans.) The rest of the agencies are at various intermediate stages.

Similar progress has been made on mission-critical systems. Twenty of the agencies have 61 "Round 1" mission-critical systems. Eight of these systems are compliant now, 8 will be compliant within the next 6 months. Some compliance efforts have not begun and the rest are in between.

The PMO is organizing a workshop on September 17 to jump-start agencies that are just now launching their projects. DET will present their Project Management approach and DOR will share their Awareness approach.

Discussion: 1) It would helpful if the PMO posted the mission-critical systems on the web. 2) Agencies want feedback on the interview. The PMO will be responding to both suggestions after the initial round of interviews are concluded.

2) The PC Problem

(Catherine Bayliss) The DOR approach is that end-users who have developed PC applications are responsible for ensuring compliance. However the DOR Y2K project team is still responsible for coordinating & facilitating this effort. To do this, they have designated end-user captains for the divisions. Each captain will survey its division, identify applications and third-party software, and determine next steps to ensure compliance.

Discussion: 1) End-user responsibility for applications may be easier said than done for applications where the developer/vendor is gone and user has no technical background. MIS may still need to step in. 2) There are a lot of web sites posting compliance status of third-party software but users must be aware that there may be some discrepancies. 3) The PMO will research the Y2K compliance status for items purchased under the last 3 Big Buys.

(Raymone Washington, Umass-Boston) PC Compliance: PCs should roll over safely and economically with respect to BIOS, system clock, and applications for key dates: Dec 31, 1999; Feb 28, 2000; Feb 29, 2000; and Mar 1, 2000. Getting the system time from a server is not sufficient for determining compliance. Any time the server is down, the application will look at the PC clock.

There are a number of PC tests for BIOS and system clocks to determine if a PC is compliant. Raymone is currently testing a tool called Year2000.Com which is a small resident program for DOS, OS/2 and Windows (including Windows 95) that fixes the 1999-2000 date transition flaw of the CMOS RTC in AT-class PCs and PS/2s, 286 through Pentium and its clones. It works, and it's free for personal, non-business use. Information on this product can be found on the web at <http://www.righttime.com/>.

Discussion: 1) The PMO will contact OSD to see about a general license for this product.

Year 2000 may also impact application cards, modems, CD ROM writers, fax machines, printers, and any other devices that utilize date logic. Users should also understand that external interfaces can "undo" compliance. E.g., a non-compliant PC, which passes data to a mainframe application, can corrupt the database and cause a failure. Another issue for compliance is the compliance range or how far into 2000 a product is compliant. Finally users should be aware of other Y2K time bombs: firmware and licenses.

3) Spending Plans

(Tom Smith) The Fiscal Affairs Division (formerly Budget Bureau) has sent out its package of spending plans for FY 98 and 99. One of the planning forms is dedicated to Y2K budgets. While departments are expected to become compliant using their existing funds, the Y2K planning form is an attempt to gather information to see if that is possible. The spending plans are to be completed by agencies' chief fiscal officers and budget directors, but Tom is encouraging User Group representatives to give them input.

Discussion: The Y2K supplemental budget has been earmarked primarily for DOR and DET. If an agency needs money, it should identify it in the spending plan.

4) General Discussion

- 1) Awareness. A significant number of the attendees agreed that there is still not enough high-level awareness for Y2K
- 2) PMO has scheduled a Year 2000 Day (formerly called Y2K Awareness Day) on October 9 on the 21st floor. The agenda includes:
 - SAIC - ITD PMO Presentation
 - Digital Equip. - Assessment to Implementation
 - EDS - Y2K Testing
 - Cambridge Resource Group - Popular Y2K misconceptions

- 3) The next Users Group meeting is scheduled for 9:00, October 14, on 21st floor of the McCormack building. Each agency attending the September 2 meeting was tasked with bringing another agency that is not on the attendees list above to the next meeting.

Minutes
October Y2K User's Group Meeting
October 14, 1997

The October Y2K User's Group Meeting was held on October 14. Marcia King welcomed the attendees and discussed the agenda as well as the upcoming Year 2000 Conference and Expo being held in Boston on November 17-19. The state is eligible for a sliding scale rate: the attendance fee for one person is \$995; for 75 or more, \$200, \$395 for 50-74 and \$595 for less than 50. She asked that she be notified by Friday, October 17, if people plan to attend.

1. Y2K PMO Update. Daylia Vaughan from the Y2K PMO presented the status of the PMO. She reviewed the focus of the PMO over the last 3 months; determining the Commonwealth's Y2K status, identifying mission critical systems and determining how the PMO can help. Of the over 120 agencies that were interviewed, 54 are compliant or will be in early calendar 1998. There have been 128 mission-critical systems identified. Thirty-three of these are compliant or will be by early 1998.

Among the concerns of the PMO were:

- Incomplete or non-existent plans and reports;
- Incomplete inventories or assessments;
- Lack of awareness that Y2K is not just an MIS issue;
- Delays in starting replacement systems; and
- Incorrect assumption that *MS Office*-only shops are fully compliant.

She recommended agencies:

- Centralize Y2K project planning efforts;
- Develop/Update Y2K project documents;
- Continue awareness efforts; and
- Develop diagnostics for testing.

Daylia reviewed timelines and milestones for a typical project and urged those who hadn't completed such a plan to do so to ensure timely completion of their project. She wrapped up by reviewing the contents of "Meeting the Challenge, 2nd Edition", which was available at the meeting

2. Comments from the CIO. Louis Gutierrez stressed the importance of the total Y2K effort and thanked those in attendance for their participation. He emphasized that Y2K is a management effort, not solely an IT effort. He spoke about the impact of Secretary Baker's directive on the priority of Y2K and reminded us that Y2K should not be used for obtaining systems or equipment not essential for Y2K compliance. This was to be addressed through the normal budget process.

Louis pointed out that Val Asbedian and Daylia Vaughan were planning to attend a national conference on Y2K on October 28. The conference, by invitation only, was intended to bring together state and federal agencies on a level playing field to share information critical to implementing successful Y2K programs. Agencies who share data with the federal government and have specific concerns on interfaces, testing, or electronic bridges should contact Val or Daylia as soon as possible.

He once again expressed his appreciation and support to the agencies in attendance.

3. OSD Update. Jerry Polcari of OSD reviewed the latest list of state blanket contractors that had signed the state's Year 2000 Warranty. Fifty-two of seventy-three have signed. He talked about the reluctance of the "big six" vendors and Microsoft who have decided not to sign and the impact that this might have on agencies. He said Microsoft is no longer dealing direct with any end-users, choosing instead to distribute their products through various channels. When purchasing a Microsoft product you are buying a "right to use" license. (Since our User Group meeting, Deloitte and Touche has signed the Year 2000 Warranty.)

4. MHFA Year 2000 Project Overview. The last portion of the meeting was a presentation by Lori Isaac, Systems Development Manager and Betsy Coonley, Project Tactician for the Mass. Housing Finance Agency. They presented their experiences with MHFA Y2K compliance. In the summer of 1996 they began the awareness portion of their project. This was followed by an initial review of their systems in the fall of 1996 and a Task Force being assembled in November 96.

MHFA discussed the steps they went through in the preliminary assessment phase by listing all applications and ranking them by agency importance. They moved to a detailed assessment phase where they assessed the impact of year 2000 on each system in greater detail. . They compiled system statistics that affected the compliance effort. Their findings indicated that there were 1 million lines of code, all legacy systems were impaired, client-server systems were compliant and there existed numerous interfaces between systems. Their final report summarized the date exposure, the MHFA functions at risk, the impaired systems and a ranking of the impairment.

The general Y2K philosophy was to convert as few systems as possible preferring to buy systems if possible and building only when no alternative existed. They discussed how they obtained their management support and dealt with a 75% turnover of long-term MIS employees. They developed a Business Continuation Plan to address mission critical system failures.

The Section 8 Tenant Register (STR) was selected as a pilot project because (1) it was mission critical, (2) there was no satisfactory alternative, (3) it would fail by December of 1998, and (4) it was a manageable size. Among the steps they took in their approach were; to eliminate obsolete programs, build a baseline system, stop all but mandated enhancements, build a test dictionary, modify date fields, convert to new data base structure, test, and implement.

Among the lessons learned, they found:

- Missed date fields in COBOL WS; VAX COBOL was not entirely compliant;
- They underestimated file conversion time;
- Most bugs were from file conversion, not date;
- They lost functionality with file change;
- Unit and system testing is an iterative process;
- The project team should work in close proximity;
- Production support caused interruptions;
- They needed to allow for extra H/W resources; and
- They needed to beware of interfacing to non-compliant systems.

The STR pilot has completed testing for the current year and is testing beyond the year 2000. An update will be provided when the pilot has been completed.

(Agencies may contact Bob Lebel from the Y2K PMO for handouts on the MHFA project.)

Minutes
November Y2K User's Group Meeting
November 4, 1997

The November Y2K User's Group Meeting was held on November 4, 1997, on the 21st floor of the Ashburton building. Marcia King welcomed the attendees. She reviewed the agenda and reminded everyone of the availability of the second edition of the "Meeting the Challenge" book. She reminded attendees of the upcoming Y2K conference and asked that anyone interested notify her by Friday, Nov 7th. So far, she has had 10 people sign up. She also encouraged attendees to provide her feedback with regard to User Group meeting content.

Val Asbedian said that 1998 was going to be "the year" since 1997 was just about over and 1999 was too late. Systems needed to be up and running by January 1999 and if agencies felt that there was a risk of not making this date they needed to develop a contingency plan.

Daylia Vaughan reviewed the highlights of the agency interviews:

- 137 agencies interviewed
- 73 agencies have 158 mission critical systems
- 51 of the 158 are compliant or will be by 3/98
- 12 agencies have all their mission-critical systems compliant
- 76 mission critical systems need schedule reviews/verification

She reviewed the ITD guidelines that indicated that all mission critical systems needed to be tested by 12/98 and deployed by 1/99. Contingency plans need to be developed if there is a risk of not making these dates. She recommended agencies:

- Centralize Planning efforts
- Develop
 - Strategic Plans and schedules
 - Project and test plans for systems being remediated
 - Contingency plans for systems at risk

The PMO is working on a Statement of Compliance which agencies will be asked to sign for each system that has completed its Y2K conversion.

Daylia said the PMO would conduct another round of interviews before the end of the year. Depending on the agency and mission-critical/essential system status, many interviews will be done by phone and e-mail.

Daylia also talked about the State/Federal CIO Summit on Year 2000 she and Val attended in Pittsburgh. Val said he felt Massachusetts was in the "front group" of states in terms of Y2K progress. There were over 100 participants from 42 states and 21 federal agencies. Interfaces, mutual certification and testing, and electronic bridges for

exchanging data among states and the federal government were the three work shops . Texas had implemented a policy whereby agencies had to give a 120-day notice prior to implementation of an interface change. The group recommended that the Feds adopt a similar policy Additional information on the summit is posted on the web at http://www.state.pa.us/PA_Exec/OIT/y2k/ciosummit/ciosummit.htm.

. Dick McCann briefed the group on DMA's Y2K project and detailed how they are going about ensuring compliance. They have 3.15 million LOC, about 500,000 lines of which need to be remediated. They have created a separate organization with teams to be staffed by about 30 contractors. DMA staff from the maintenance and enhancement group will develop the Y2K work packages and lead each team. They estimate they will need 350-400 work packages, each consisting of about 200 hours of work. The remediation process will be largely a manual effort, although during the next quarter they will be considering the use of tools.

Dick said there were constraints, like funding, adequate staffing, space, and hardware but he felt confident they could be addressed successfully. Nonetheless, they were going to develop a contingency plan. In January they will assess the process to determine if any changes need to be made. He will report back in early 1998 to apprise the User's Group of their progress.

Tom Smith from the Budget Bureau reported on the Y2K spending plans agencies have recently submitted. The costs for 2 years total about \$50 million but that was inclusive of reimbursed monies. He said he expected more requests for additional funding. The Budget Bureau has submitted to the legislature another supplemental appropriation of \$5,000,000. Agencies need to get their requests in to the Budget Bureau as soon as they recognize they need additional funds.

The next meeting will be held December 2nd on the 21st floor of Ashburton.

If you couldn't attend and want copies of the presentation material, please notify Bob Lebel and it will be mailed out as soon as possible.

Y2K User Group Meeting Minutes

December 2, 1997

The December Y2K User Group Meeting was held in the conference room on the 21st floor of One Ashburton Place. Sixty-five people from 34 agencies attended.

- **Marcia King, Y2K PMO**

Marcia opened the meeting by welcoming the agencies, reviewing the agenda, and describing the handouts:

1. *Year 2000, Meeting the Challenge, Second Edition*, a publication produced by the PMO containing reference material for the agencies; and
2. OSD's current list of hardware and software service areas and the approved consulting services vendors with expertise in each area.

- **Daylia Vaughan, Y2K PMO Project Manager**

Daylia provided an update on the activities of the PMO:

- The PMO is in the process of completing the second round of interviews focussing on agencies with mission critical and essential systems. One of the goals of the second round of interviews is to develop a statewide master schedule of mission critical systems to track.
- The PMO is developing a standard approach for PC compliance with a plan to conduct a series of small workshops scheduled to begin after the first of the year.
- The PMO is also in the process of developing a Compliance Statement for agencies to sign when their infrastructure and mission critical/essential systems are compliant. The goal is to develop a simple format – one page that covers the agency, such as all PC's are compliant, all non-IT systems are compliant, and a list of all mission critical and essential systems. For each mission critical and essential system, another page will be required specifying things like date formats used for interfaces (e.g., the system uses the TD recommended standard CCYYMMDD) and specific Y2K testing (e.g., 9/9/99, rollover from 12/31/99 to 1/1/00).
- The early results of the interviews provide the following information:
 1. While a number of agencies are addressing non-IT or embedded systems, many agencies have not considered this area. In particular, agencies need to assess the Y2K impact at their off-site facilities.
 2. Not much attention is being paid to testing.
 3. The progress of Y2K projects across the agencies varies, as would be expected:
 - Many agencies have made good progress
 - Some agencies are experiencing growth in scope and the effort continually enlarges, therefore their schedules have been slowed and a few are still in the Assessment and Planning Phase.
- Daylia reminded everyone of the schedule that was published in the *Year 2000, Meeting the Challenge* booklet:
 - The Assessment and Planning Phase should have been completed this past summer.
 - The Remediation Phase should be in full force now.
- The PMO recommends that agencies:
 - Ensure that everyone in their agency understands Secretary Baker's directive
 - Ensure that staffing and funding is available and in place
 - Validate/update their master plans, detailed project plans, and schedules.
 - Make sure schedules have slack
 - Gather their project teams to review the plans and do a risk assessment
 - Start contingency planning
- Activity in other states includes:
 - New York
 - Experiencing scope and schedule growth; schedules are slipping
 - Selected a vendor to audit Y2K projects of the top 7 agencies
 - Michigan
 - Have included Y2K compliance in their performance reviews

- Are working on a standard letter for facility non-IT systems
- Pennsylvania
 - Have an aggressive approach with regulatory agencies
 - Require compliance statements from agencies
- Questions:
 - DOR asked that the PMO provide information, either via a workshop, user group meeting, or publication, on triage and contingency planning. The feeling was that not too many people had been in the situation before and were unsure of the best way to go about it.

• **Val Asbedian, Director of SPG**

Val provided an update on the status of funding, as well as, other Y2K events taking place. The legislature did not act on the administration's request for an additional \$5m supplemental budget for Y2K before they adjourned. While the SPG and, specifically, Louis Gutierrez, are working with the Budget Bureau to go back with the request again, it is important that the agencies realize that ultimately they are responsible for Y2K compliance. Therefore, they need to plan what they will do for Y2K compliance if there is no funding available. The plan may be to stop something else, abort other plans, etc.

It is important to beware of slips. Regardless of what causes it - it is still a slip and, unfortunately, the year 2000 won't slip. Since slips in projects of this size are probably natural, agencies need to start early to deal with any bumps they may encounter in their projects.

There's a lot of concern and a great amount of effort remaining. Val suggested that those agencies present at this User Group meeting invite agencies not present to attend the next one. It is extremely important that all agencies become Y2K compliant.

• **Bob Ryan, Division of Capital Planning and Operations (DCPO)**

The DCPO is responsible for three buildings within the Commonwealth: the Transportation Building, the Massachusetts Information Technology Center (MITC) in Chelsea, and the Springfield State Office Building. Each building is managed by a private building manager, and Bob has asked each of the building managers for an assessment and inventory of their non-IT systems and requested that they follow up with the vendors of those systems. Bob's office has statements for the systems for each of the buildings regarding the compliance status and plans for bringing non-compliant systems into compliance. MITC is already in compliance. For the other buildings, most systems are in compliance or the vendors have indicated that no dates are involved. Anyone with questions regarding these buildings can call Bob at DCPO. (Note that the Bureau of State Office Buildings is responsible for the Government Center buildings.)

Questions and Answers:

1. *Did the assessment and inventory include phones?* Bob said it included phones, security, elevators, etc.
 2. *What role does DCPO play in renewing leases and Y2K compliance?* DCPO will play the same role in renewing leases as it always has. They will most likely make a Y2K compliance statement part of the lease packages. A reminder: it is the responsibility of each agency in leased buildings to contact their landlord regarding Y2K compliance of non-it systems. If agencies have any issues coming out of the contact, DCPO can help.
- **Stephen Dick, Assistant Attorney General from the Attorney General's office**
- As part of being assigned the issue of Y2K liability, Steve has done quite a bit of research and discovered that not much has been written yet on problems regarding Y2K and the government. This is unusual, since early purchasers of mainframes were often governments and therefore the Y2K problem has a big impact on government.

On the other hand, there has been quite a bit written already about the private sector and a number of lawsuits already filed. Visa has experienced significant problems when it issued cards with expiration dates into 2000. Over 1 million ATM machines refused to accept the card.

The most serious problem involved in Y2K lawsuits is negligence, defined as an unreasonable failure to do what should be done to prevent substantial harm, both physical and/or financial. Negligence includes recklessness. The government can be considered negligent; consider the example that follows. If a private citizen rear ends another car causing damage to the car and possible personal injury, that citizen can be sued for negligence. If you substitute a state trooper in a state police car for

the private citizen, then the trooper can be considered negligent. However, according to state laws, the trooper is indemnified and the state is actually considered the negligent party – the trooper becomes merely a witness.

A number of scenarios are possible relative to Y2K: a Medicaid check may not be issued, resulting in serious health problems; traffic lights may not work, causing a serious accident; a private citizen may be arrested during a routine traffic violation because the computer may not recognize a valid license or registration; or a violent criminal may be released from prison.

The Legislature can exempt the state from suits arising from Y2K problems. It would not be unprecedented: as of December 1997, Nevada has enacted a law exempting them from Y2K related lawsuits. It is Steve's opinion that the Commonwealth might do the same thing because it is potentially too ruinously expensive to allow this type of litigation.

Steve closed by emphasizing that this was no reason to be less than vigilant in addressing Y2K compliance.

Questions and Answers:

1. *We may presume we have sovereign immunity, but can we sue vendors that cause us harm if their product is not Y2K compliant?* Yes.

- **Jerry Polcari, OSD**

Three new vendors have signed the Y2K warranty agreement since the last User Group meeting:

- Software AG
- Systems Engineering
- Clarity Group

For the latest information, see OSD's web site, the '98-3' update.

KPMG has contacted Jerry and expressed interest in signing the Y2K warranty. However that was three weeks ago and Jerry has not received their paperwork yet. The same is true for Sybase. Besides KPMG, the other 'Big 6' that have not yet signed are Coopers & Lybrand, Arthur Andersen, and American Management Services (AMS). At least 3 more large vendors have also not yet signed.

They will be bidding shortly on a large software procurement, basically a statewide software reseller who will represent hundreds of vendors. Y2K will be a major issue.

An extension was available on mid-range vendor contracts; a condition of that was that the vendor had to sign the Y2K warranty. AT&T consulting services refused to sign and was dropped from the contract.

The current blanket contract for consulting services is a 3-year contract due to expire 6/30/98. OSD has not yet decided whether to extend it for another 9 months to a year or to let it lapse. If it is going to lapse, then the RFP for the new contract will need to be ready by April so that there will be no period of time when consulting services are unavailable to the agencies. They plan to start working on the RFP during the first of the year.

The next User Group meeting is schedule for January -13, 1998 in the 21st floor conference room at One Ashburton Place.

Y2K User Group Meeting Minutes

January 13, 1998

The first Y2K User Group Meeting of 1998 was held in the function room of the cafeteria at One Ashburton Place. Sixty-two people from 39 agencies attended.

- **Marcia King, Y2K PMO**

Marcia opened the meeting by welcoming the agencies, reviewing the agenda, and describing the handouts which included copies of *Meeting the Challenge, Second Edition*, a standard letter to landlords developed by the PMO, and *ITD Data Center Agency Year 2000 Test Support Manual*. All three handouts are available on ITD's web site: <http://www.magnet.state.ma.us/y2k/>

- **Val Asbedian, Director of SPG**

Val provided an update of PMO activities.

- Current projects underway include development of a Y2K Test Plan template and a Statement of Compliance, and continued development of a standard approach for PC compliance and the vendor management program.
- Interviews for the fourth quarter of 1997 yielded following results:
 - Good news is that some agencies have elevated the priority and visibility of their Y2K efforts and have extended their awareness programs to local entities throughout the state
 - Bad news is that a few agencies are still in assessment, some agencies have not yet launched their projects for their mission critical systems, there are still funding and staffing problems, and some agencies are still having difficulty documenting their project plans and schedules.
- Interviews also indicated that test planning is weak. It is important to:
 - Understand consequences of system failure, downtime, and undetected system errors
 - Match amount of testing to the criticality of the application, the remediation strategy, and the frequency of date usage
 - Resist the temptation to shortchange testing
 - Determine appropriate strategies
 - Document the test plan and schedule

Val also provided an update on the status of the Federal government: Y2K remediation and implementation target dates have been tightened; the format of and schedule for data exchanges with the states will be defined by March 1, 1998; interagency workgroups have been established; and some agencies are very far behind, most notably HHS and FAA.

Question: Can any of the current state budget surplus be targeted for Y2K?

Answer: There's been a lot of dialog between ITD and the Ways & Means Committee, plus ITD and the Budget Bureau. Nothing has been finalized though.

Question: Is there any money from the legislature for Y2K for independent agencies and authorities?

Answer: They are expected to get their own money.

- **Ralph Ragucci, ITD Data Center Director**

- In cooperation with ITD SPG, the Data Center has produced a Y2K Test Support Manual for its customers which describes the responsibilities of the Data Center and the responsibilities of its customers for Y2K testing, provides guidelines for Year 2000 testing, and describes expected agency activities relative to their Y2K testing. The manual was available as a handout and can also be downloaded from the web: <http://www.magnet.state.ma.us/y2k/>
- The Data Center maintains a mainframe and some mid-range client/server systems. The client/server systems are relatively new applications, therefore, Y2K is not an issue. The mainframe, however, still has some Y2K issues:
 - The hardware, the Amdahl, is compliant according to the manufacturer.
 - The microcode, the next level, is also compliant.
 - The operating system, MVS, is not compliant; they are migrating to OS/390 which will be compliant. This will take approximately 6 months to install and test.
 - The Communications software, Teleprocessing Monitors, and Programming Languages are expected to be compliant by mid-year. Note that Cobol/VS will not be compliant and not supported; agencies using this language will need to migrate to Cobol II.

Question: What about software that is already compliant on the existing platform? What will happen with the upgrades?

Answer: It will need to be retested.

- The DB2 database is compliant.
- By June or July, all Data Center components will be compliant. In the mean time, agencies can continue with their remediation efforts.
- The Data Center is creating a logical partition that will be available for major Y2K testing. They will attach DASD, tape drives and anything else needed for the testing. This is expected to be completed by mid-year.
- **John Shontell, Chief Information Officer for the Office of Consumer Affairs and Business Regulations**

The Office of Consumer Affairs consists primarily of a number of consumer watchdog agencies. Their approach to IT projects is to work jointly in planning and pooling resources. About 2 months ago, they called a moratorium on all major IT projects so that they will have the resources needed for Y2K.

Many agencies within OCA have systems for registration and licensing, many of which are non-compliant. They are in the process of building CLARIS (Consumer Licensing & Registration Information System) to handle registration and licensing for all their agencies. CLARIS will solve the Y2K problem, but its development schedule is pushing the envelope for the Year 2000. Thus, OCA has developed alternate approaches to achieve compliance.

- **Division of Registration:** This is an umbrella agency to 32 boards of professional and occupational registration. The current system consists of approximately 160,000 lines of code in 467 Natural programs. Dates are embedded in key fields. Their solution is to expand the date fields to 8 digits and use windowing for their numerous 3rd party interfaces. Date fields printed on reports will not be expanded.
- **Alcoholic Beverage Control Commission:** They have 90 programs written in ACCOLADE and 1 part time, experienced programmer. They expect to complete remediation by June 1998.
- **Division of Standards:** They have 128 programs with approximately 40,000 lines of code. Their solution is to expand the date fields to 8 digits. The system is expected to be in production by June 1998.
- **Board of Registration in Medicine:** Their licensing system consists of 3 pieces, all written in FoxPro. Remediation is fairly simple. All versions of FoxPro, back to V1.0, store 4 digit years. Changing an environment setting will automatically change dates from 2 to 4 digits. They have to check the dates, though, that have been converted to string fields. They have also checked their desktops: 17 are fully compliant, 48 can be made compliant, and 34 are non-compliant.
- **Division of Insurance:** This division is currently running their systems on a Wang machine which has exceeded its life expectancy. In addition, the code is cumbersome, and the demand for consumer information has increased. Remediation is not an option. Their approach is to reengineer their systems and combine this with some 3rd party software. In order to meet the Year 2000 deadline, they will build this temporary system to meet the minimum requirements. Their target date for completion is January 1999.

Several divisions within OCA are working with their regulatory community to ensure Y2K compliance.

- The Division of Insurance conducted a survey of domestic insurance agencies and found that most have a high level goal and plan for Y2K remediation as well as formal timetables. DOI is recommending that Y2K be included in their current auditing process.
- The Division of Banks has been conducting a program with their regulatory community that includes awareness, assessment, follow-up, enforcement, and failure resolution. By March 31, 1998, 100% of their banks will have been rated. Their credit unions have also been rated: 11 are rated high risk, 72 medium risk, and 37 low risk.

John wrapped up the presentation by summarizing OCA's Y2K.

The next User Group meeting will be held on February 10, 1998 in the conference room on the 21st floor of One Ashburton Place.

Y2K User Group Meeting Minutes February 10, 1998

The Y2K User Group Meeting was held in the conference room of the 21st floor at One Ashburton Place. Fifty people from 28 agencies attended.

- **Marcia King, Y2K PMO**

Marcia opened the meeting by welcoming the agencies and reviewing the agenda. During the meeting, she reminded the attendees of the handouts available:

- Test Plan template
- Vendor Management Packet
- Article: "Telecommunications Products and the Year 2000 Problem"
- PC BIOS White Paper
- Auditors' Report on results of their survey
- Boston Globe article on Auditors' Report
- Government Computing News article on Y2K Test Tools

* Available on the ITD Y2K web site: <http://www.state.ma.us/y2k/>

Marcia also informed the group that the PMO would shortly be starting the next round of interviews and that it is important for the agencies to give the PMO as much information as possible. She also asked that agencies not bring any vendors to the User Group meetings other than those working as 03 contractors. A better forum for the vendors is the quarterly Year 2000 days.

- **John Beveridge, Office of the State Auditor**

John's presentation focussed on the key points from the Auditor's Y2K survey and presented the auditor's perspective on Y2K and the Commonwealth agencies. The survey was structured to take the reader from awareness through implementation. In all, 607 surveys were mailed; the survey was also reprinted in ITD's *Year 2000, Meeting the Challenge* and an additional 31 entities filled out and submitted the survey. The Auditor's office received a total of 282 written responses, some covering multiple entities for a final total of 453 entities for which survey information was obtained.

The auditors expected to see most of the agencies heavily into the assessment and planning phase. Instead, they found that most of the agencies were still in awareness, although there were some in assessment and seemed to be moving rapidly on the path to implementation. They also learned that the level of management support needed for Y2K was generally not in place. Recommendations are embedded within the results and also listed separately in an appendix. The auditors hope that the report raised awareness and helped the agencies although they are concerned with the short time frame left.

Question: How did the Globe article represent the report?

Answer: John felt that the Globe article was reasonable, although one of their percentages, 95% of the managers had not taken any steps, was wrong – they had taken the statistic that only 5% had approved, written plans, and flipped it to mean that 95% had nothing.

Question: What are the next steps?

Answer: The Auditor's staff would like to start some targeted audits, looking at different issues such as the level of confidence in Y2K vendors, success stories and problems, and opportunities where we all can learn.

Question: When and how will they conduct these independent agency audits?

Answer: They do not know yet. There is not enough staff to audit every agency, so they will be working closely with ITD. They may do another, shorter questionnaire and target different systems such as embedded systems (elevators, heating, lighting systems).

John stressed the idea that agency heads should be involved in discussions with the auditor about Y2K and future interaction with the agencies regarding Year 2000 should be with managers, not just IT staff.

Finally, John asked that anyone having any suggestions about the questions on their survey that would be helpful on future surveys contact him.

- **Tom Smith, System Manager for Fiscal Affairs**

Tom reported that on January 30th, they submitted a two part supplemental bill to the Legislature. The first part was for a FY98 appropriation, \$2.8m, specifically targeted for DMA's Y2K project. The second part, previously submitted in August and now resubmitted, is for \$10m for ITD to address critical Commonwealth systems and not earmarked for specific agencies or departments. Agencies must submit requests to ITD and provide adequate justification for the request.

Question: Is the form the agencies used with their Budgets the one to use to request ITD funds?

Answer: No. The agencies should stay in touch with ITD's PMO; in addition, the agency's budget person should be talking to the fiscal affairs budget staff.

As an aside, Tom noted that changes to systems for Y2K can mean learning how to use the system again. Recently, the Information Warehouse has been modified and ways he used to query the warehouse no longer work and that he needed to change the way he now goes about his business.

- **Daylia Vaughan, Y2K Project Manager**

Daylia provided the monthly update of the PMO activities. She noted that a sample Test Plan was available as a handout for agencies and stressed the importance of testing and the fact that there is no time to lose – agencies should be testing NOW.

Current Activities of the PMO:

- Interviews for the next quarter are about to begin and will focus mostly on agencies with mission critical and essential systems that are not yet compliant.
- Vendor management – a packet that the agencies can use to contact their vendors, inventory their vendor products, and track compliance is also available as a handout and on ITD's Y2K web site.
- Interface management – a packet will be available by the end of the month.
- Statement of Compliance – still working on this, balancing it against others, especially the Feds. We are considering testing it against a few agencies that believe they are compliant. If anyone wants to volunteer, contact the PMO.

Results of the last round of interviews:

- One hundred twelve of 170 agencies were interviewed.
- Thirty-two percent of mission critical and 34% of essential systems are compliant.
- 37 of a total 217 mission critical systems are considered high risk; 36 of 170 essential are considered high risk.
- Risk factor is a snapshot in time and is an indicator only. It is based on information provided at the time of the interview. The PMO expects the risk factors to change.

PC Approach:

The PC workshop has been delayed slightly since the PMO is trying to piggy back on a similar effort by another group within SAIC. In the meantime, we have produced a white paper describing the PC BIOS problem and ways to address it. However, because agencies will most likely want to take advantage of the upcoming Big Buy to replace non-compliant PC's, they need to estimate their hardware requirements in the next few months. Therefore, we will develop a strawman working group to address only the hardware portion of the PC for now. The PMO is looking for volunteers to test the process we develop.

Microsoft's Response to Y2K:

The PMO recently attended a seminar sponsored by Microsoft describing their response to Y2K. Microsoft has changed their Y2K strategy. They have established the corporate level position of Y2K Strategy Manager, are in the process of defining compliance, and are developing a Product Guide. The Product Guide will be available in mid to late March at <http://www.microsoft.com/year2000>. Each

product listed in the guide will include a statement that it is or is not compliant, pre-requisites for compliance, date handling processes, common pitfalls, and testing recommendations.

Question: How does the PMO determine something is at high risk?

Answer: According to best practices, mission critical systems should be in production by January 31, 1999. If an agency has experienced some setbacks and is now estimating a system to be in production by March or May of 1999, then at this point in time, that system is high risk. However, with successful risk mitigation techniques, by the next interview, they could be out of the high risk category.

Daylia also encouraged agencies to ask questions during the interviews.

- **Cholthanee Koerajna, Ass't Vice President for Computing Services, Massachusetts Bay Community College**

Mass Bay is currently moving toward a completely paperless office. They have established a client/server integrated system using an Ingres RDBMS and GUI front end running on a DEC Alpha. Clients are all new Pentiums with a minimum 32 mb RAM. The new system has reduced human operation by 98% and provides an audit trail.

All systems are running in the new environment. The most important system is their financial system. Since all systems are new, the Year 2000 problem is minimal. The Ingres database is Year 2000 ready and, according to Ingres Technical Support, will roll over to the new century with no problems. There are date issues related to the way the tables and system were designed. There are instances of some dates being defined as Char(2) as well as screen and report displays and calculations using just the right 2 characters of the year field. This impacts most of their systems.

Correction of the problem is not difficult, though, because of the design and implementation of standard notations. Global searches can and have been done to find the fields where there are problems and correct them. Where necessary, date fields have been expanded. Data in the database has been converted.

The next User Group Meeting is scheduled for March 3, 1998.

The next Commonwealth Year 2000 Day is scheduled for March 19, 1998.

A●reness Day

Agend●

Please Join Us on:

Wednesday
April 2, 1997
CLAR
One Ashburton Place

21st Floor

Boston, MA 02108

Register By Calling:

Marcia King
Y2K Coordinator, ITD
Commonwealth of
Massachusetts
(617) 973-0711

or

WAN:

Marcia King@Planning@ITD.BOS

Internet:

Marcia.King@State.MA.US

Continental Breakfast

8:45 AM

Welcome and Opening Remarks
Louis Gutierrez, CIO, Commonwealth
of Massachusetts

9:00 - 9:30 AM

Year 2000 Contractual Issues
Jeff Jinnett, Attorney, LeBoeuf, Lamb,
Green & MacRea, LLP
Sponsored by Unisys Corporation

9:30 - 10:30 AM

Coffee Break

10:30 - 10:45 AM

MMARS Update
Systems Resources Corporation

10:45 - 11:45 AM

Buffet Luncheon

11:45 - 1:00 PM

Vendor Software Management
Charles Brown, GTE
Sponsored by C.W. Costello Associates

1:00 - 2:00 PM

Year 2000 Assessment,
Conversion & Testing
Assessment: Intermetrics
Conversion: Peritus
Testing: DSD Labs

2:00 - 3:00 PM

Closing Remarks

3:00 PM

**JUNE 12, 1997
YEAR 2000 AWARENESS DAY**

AGENDA

- 8:45 Continental Breakfast & Registration
- 9:00 Welcome
- 9:05 ITD Perspective
- 9:15 Year 2000 Program Office
Information Technology Division
- 10:15 Break
- 10:30 The Year 2000 Opportunity
Microsoft Corporation
- 11:30 Oracle Applications for Year 2000
Oracle Corporation
- 12:30 Totebag Lunch/Vendor Display
- 1:30 Year 2000 Compliant Strategy
NYNEX
- 2:15 Lucent BCS Year 2000 Compliance Program
Lucent Technologies

**PLEASE JOIN US JUNE 12TH AT:
THE COMMONWEALTH OF MASSACHUSETTS
ONE ASHBURTON PLACE , 21ST FLOOR
BOSTON, MA**

RSVP- REQUIRED. REGISTER TODAY!

**CALL MARCIA KING AT (617) 973-0711
INTERNET: MARCIA.KING@STATE.MA.US
WAN: MARCIA.KING@PLANNING@ITD.BOS**

**OCTOBER 9, 1997
YEAR 2000 AWARENESS DAY**

AGENDA

- 8:45 Continental Breakfast & Registration
- 9:00 Welcome and Opening Remarks
- 9:15 Year 2000 Program Office
Information Technology Division
- 9:45 Assessment to Implementation
Digital Equipment Corporation
- 10:45 Break
- 11:00 Year 2000 Testing
EDS Corp.
- 12:00 Popular Misconceptions of Year 2000
Cambridge Resources Group

**PLEASE JOIN US OCTOBER 9TH AT:
THE COMMONWEALTH OF MASSACHUSETTS
ONE ASHBURTON PLACE, 21ST FLOOR
BOSTON, MA**

**RSVP-REQUIRED. REGISTER TODAY!
CALL MARCIA KING AT (617) 973-0711
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**Year 2000 User Group Meetings -
Attending**

Secre- tariat	Agency	1997											1998			# of UG Meetings
		Mar. 97	Apr. 97	May 1997	Jun. 97	Jul. 97	Aug. 97	Sep. 97	Oct. 97	Nov. 97	Dec. 97	Jan. 98	Feb. 98	Mar. 98		
A&F	Admin. Ag. for Dev. Disabilities							X					X		2	
A&F	Admin. Law Appeal							X							1	
A&F	Budget Bureau		X			X	X	X	X	X		X	X	X	9	
A&F	Bureau of State Office Bldg.							X							1	
A&F	Capital Planning & Operations							X			X				2	
A&F	Civil Service Comm.							X							1	
A&F	Comm. Against Discrimin.							X	X	X					3	
A&F	Dept. of Revenue	X	X	X	X	X	X	X		X	X	X	X	X	12	
A&F	Dept. of Veterans Services							X							1	
A&F	Disabled Persons Protection							x				X			2	
A&F	Finegold Library							X							1	
A&F	Group Insurance Commission							X							1	
A&F	Human Resources Div.							X		X		X		X	4	
A&F	Information Technology Divison	X	X	X	X	X	X	X	X	X	X	X	X	X	13	
A&F	Office of Dispute Resolution							X							1	
A&F	Operational Services Div.	X	X	X	X	X	X	X	X	X	X				10	
A&F	Public Emp's Retirement Board'							X						X	2	
A&F	Teacher's Retire Board							X							1	
A&F	Worker's Comp. Litigation							X							1	
Const Officers	Inspector General							X							1	
Const Officers	Secretary of State							X	X		X				3	
Const Off's	Attorney General							X			X				2	
Const Off's	Auditor's Office			X	X	X	X	X	X		X		X		8	
Const Off's	Governor's Council							X							1	
Consumer Aff	Alcol. Bev. Control Comm.											X			1	
Consumer Aff	Board of Reg. In Medicine							X	X	X		X	X		5	
Consumer Aff	Dept. of Public Utilities									X		X			2	
Consumer Aff	Div. of Banks											X			1	
Consumer Aff	Div. of Business Regulations							X							1	
Consumer Aff	Div. of Consumer Affairs								X		X	X	X		4	
Consumer Aff	Div. of Insurance											X	X		2	
Consumer Aff	Div. of Registration	X							X	X		X			4	
Consumer Aff	Div. of Standards								X						1	
Consumer Aff	Energy Facilities Siting Council							X							1	
Consumer Aff	State Racing Commision							X	X	X	X	X	X		6	
Econ Devel	Office of Film						X								1	
Econ Devel	Office of Minority Business										X				1	
Econ Devel	SOMBA									X	X				2	
Education	Dept. of Education									X					1	
Elder Affair	EO Elder Affairs										X				1	
Environ Affair	Dept. of Environ. Management								X	X	X	X	X		5	
Environ Affair	Dept. of Environmental Protection	X				X	X		X	X	X	X		X	8	
Environ Affair	Dept. of Marine Fisheries		X												1	
Environ Affair	EO of Environ Affairs											X	X		2	
Environ Affair	Fish & Wild. Envir. Law Enforce									X					1	
Environ Affair	Low Level Radio.Waste Mgt Bd								X						1	
General Court	House of Representatives						X		X	X	X	X		X	6	
HHS	Dept. of Mental Health		X				X		X	X	X	X	X	X	8	
HHS	Dept. of Mental Retardation								X						1	
HHS	Dept. of Public Health								X	X	X		X	X	5	

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Secretariat	Agency	1997												1998			# of UG Meetings
		Mar. 97	Apr. 97	May 1997	Jun. 97	Jul. 97	Aug. 97	Sep. 97	Oct. 97	Nov. 97	Dec. 97	Jan. 98	Feb. 98	Mar. 98			
HHS	Dept. of Social Services							X	X	X		X	X	X			2
HHS	Dept. of Trans. Assistance						X		X		X	X	X	X			6
HHS	Div. of Health Care Finance		X		X	X	X		X	X	X	X	X	X			10
HHS	Div. of Medical Assist.		X				X		X	X	X	X	X	X			8
HHS	EO of HHS								X	X	X						3
HHS	Mass. Rehabilitation Comm.									X	X						2
HHS	Office for Refugees & Immigration									X	X		X				3
HHS	Office of Children						X										1
HHS	Soldiers Home-Holyoke								X	X		X		X			4
Higher Ed	Board of Higher Education								X			X	X	X			4
Higher Ed	Mass Bay Comm College											X	X				2
Higher Ed	Salem State College													X			1
Higher Ed	UMass, Dartmouth													X			1
Higher Ed	UMass, Presidents Office						X		X	X		X		X			5
Housing	Dept. of Housing & Com Dev						X					X					2
Housing	Mass. Housing Finance Agency					X	X					X	X	X			5
Housing	Mass. Housing Partnership Fund.								X								1
Ind Agency	Committee for Public Counsel										X	X	X	X			4
Ind Agency	DA Association								X	X							2
Ind Agency	Fernald Center						X										1
Ind Agency	Mass. Bay Trans. Authority											X		X			2
Ind Agency	Mass. Education Financing Author.									X	X	X					3
Ind Agency	Mass. Health & Ed. Facilities Author.										X						1
Ind Agency	Mass. Port Authority						X			X		X		X			4
Ind Agency	Mass. Water Resources Authority								X	X	X		X	X			5
Ind Agency	Office of State Comptroller	X	X	X		X	X		X	X	X		X	X			10
Ind Agency	State Ethics Commission									X	X	X					3
Labor Dev	Dept. of Labor & Workforce Develop						X										1
Labor Dev	Div. of Employment & Training	X	X	X	X	X	X		X	X	X	X	X	X			12
Labor Dev	MassJOBS Council								X	X							2
Public Safety	Criminal History Systems Board		X	X	X				X	X							5
Public Safety	Criminal Justice Programs Division											X					1
Public Safety	Dept. of Corrections												X				1
Public Safety	EO of Public Safety								X								1
Public Safety	Merit Rating Board		X		X		X		X								4
Public Safety	Parole Board	X	X		X		X		X	X	X	X	X	X			10
Trans&Constr	Central Transportation Planning											X					1
Trans&Constr	Mass. Aeronautics Comm								X	X	X	X	X				5
Trans&Constr	Mass. Highways					X	X		X	X	X	X	X	X			8
TTowns	City of Attleboro										X						1
	Total Agencies	8	13	7	9	11	24	28	38	38	34	39	28	27			
	Total Attendees	14	17	11	15	18	34	35	62	67	65	62	50	46			

**Year 2000 User Group Meetings -
Not Attending**

Secre- tariat	Agency	1997												1998			# of UG Meetings
		Mar. 97	Apr. 97	May 1997	Jun. 97	Jul. 97	Aug. 97	Sep. 97	Oct. 97	Nov. 97	Dec. 97	Jan. 98	Feb. 98	Mar. 98			
A&F	Appellate Tax Board															0	
A&F	EO of Admin & Finance															0	
A&F	Mass. Office on Disability															0	
A&F	Office of Affirmative Action															0	
A&F	Office of Employee Relations															0	
Const Officers	Governor's Office															0	
Const Officers	Lt. Governor's Office															0	
Const Officers	Treasurer & Receiver General															0	
Consumer Aff	Mass. Cable TV Comm.															0	
Econ Devel	Dept. of Economic Development															0	
Econ Devel	Div. of Energy Resources															0	
Econ Devel	Mass. Finance Development Agency															0	
Econ Devel	Office of Business Development															0	
Econ Devel	Office of International Trade															0	
Econ Devel	Office of Travel & Tourism															0	
Environ Affair	Dept. of Food & Agriculture															0	
Environ Affair	Metropolitan District Commission															0	
Environ Affair	State Reclamation Board															0	
General Court	Senate															0	
General Court	Senate Post Audit Committee															0	
HHS	Comm. for the Blind															0	
HHS	Comm. for the Deaf & Hearing															0	
HHS	Dept. of Youth Services															0	
HHS	DMH, Southeastern															0	
HHS	Soldiers Home-Chelsea															0	
Higher Ed	Bridgewater State College															0	
Higher Ed	Bristol Comm. College															0	
Higher Ed	Bunker Hill Comm. College															0	
Higher Ed	Fitchburg State College															0	
Higher Ed	Framingham State College															0	
Higher Ed	Greenfield Comm. College															0	
Higher Ed	Holyoke Comm. College															0	
Higher Ed	Mass. College of Art															0	
Higher Ed	Mass. Hospital School															0	
Higher Ed	Mass. Maritime Academy															0	
Higher Ed	Massosolt Comm. College															0	
Higher Ed	Middlesex Comm. College															0	
Higher Ed	Mt. Wachusett Comm. Coll.															0	
Higher Ed	North Adams State College															0	
Higher Ed	Northern Essex Comm College															0	
Higher Ed	Springfield Tech. Comm. Coll															0	
Higher Ed	Westfield State College															0	
Higher Ed	Worcester State College															0	
Housing	Canadian French Cultural Comm.															0	
Housing	Comm. Econ. Dev. Assist. Corp															0	
Housing	Comm. on Indian Affairs															0	
Housing	Community Dev. Finance Corp.															0	
Housing	Manufactured Homes Commission															0	
Ind Agency	Board of Library Commission.															0	
Ind Agency	Campaign & Political Finance															0	

**Year 2000 User Group Meetings -
Not Attending**

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		Mar. 97	Apr. 97	May 1997	Jun. 97	Jul. 97	Aug. 97	Sep. 97	Oct. 97	Nov. 97	Dec. 97	Jan. 98	Feb. 98	Mar. 98			
Ind Agency	Lottery Commission																0
Ind Agency	Mass. Convention Center Authority																0
Ind Agency	Mass. Cultural Council																0
Ind Agency	Mass. Turnpike Authority																0
Ind Agency	Water Pollution Abatement Trust																0
Judiciary	Admin Office of Trial Courts																0
Judiciary	Appeals Court																0
Judiciary	Board of Bar Examiners																0
Judiciary	Boston Municipal Court Dept.																0
Judiciary	Cambridge District Court																0
Judiciary	Comm. on Judicial Conduct																0
Judiciary	Edgartown District Court																0
Judiciary	Essex County Probate Court																0
Judiciary	Essex County Superior Court																0
Judiciary	Fall River Trial Court																0
Judiciary	Framingham District Court																0
Judiciary	Franklin Div Probate&Family Court																0
Judiciary	Greenfield District Court																0
Judiciary	Hamden Housing Court																0
Judiciary	Hampshire County Superior Court																0
Judiciary	Hampshire Family Court																0
Judiciary	Hingham District Court																0
Judiciary	Holyoke District Court																0
Judiciary	Lowell District Court																0
Judiciary	New Bedford District Court																0
Judiciary	Office of Jury Commissioner																0
Judiciary	Palmer District Court																0
Judiciary	Plymouth County Superior Court																0
Judiciary	Stoughton District Court																0
Judiciary	Superior Court Admin Office																0
Judiciary	Supreme Judicial Court																0
Judiciary	Ware District Court																0
Labor Dev	Board of Conciliation & Arbitration																0
Labor Dev	Div. of Apprenticeship																0
Labor Dev	Div. of Industrial Accidents																0
Labor Dev	Div. of Labor Market Information																0
Labor Dev	Div. of Occupational Safety																0
Labor Dev	Industrial Services Program																0
Labor Dev	Joint Labor Mgmt Committee																0
Labor Dev	Labor Relations Comm																0
Public Safety	Architectural Access Board																0
Public Safety	Board of Bldg. Regulations																0
Public Safety	Bureau of Spec. Investigations																0
Public Safety	Chief Medical Examiner																0
Public Safety	Criminal Justice Training Coun.																0
Public Safety	Dept. of Fire Services																0
Public Safety	Gov's Highway Safety Board																0
Public Safety	Mass. Emergency Management																0
Public Safety	Military Division																0
Public Safety	Registry of Motor Vehicles																0

**Year 2000 User Group Meetings -
Not Attending**

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		Mar. 97	Apr. 97	May 1997	Jun. 97	Jul. 97	Aug. 97	Sep. 97	Oct. 97	Nov. 97	Dec. 97	Jan. 98	Feb. 98	Mar. 98			
Public Safety	State Police															0	
Trans&Constr	EO of Transportation/Construction															0	
TTowns	Acton Housing Authority															0	
TTowns	Adams Housing Authority															0	
TTowns	Agawam Housing Authority															0	
TTowns	Amesbury Housing Authority															0	
TTowns	Amherst Housing Authority															0	
TTowns	Andover Housing Authority															0	
TTowns	Arlington Housing Authority															0	
TTowns	Auburn Housing Authority															0	
TTowns	Avon Housing Authority															0	
TTowns	Ayer Housing Authority															0	
TTowns	Barnstable Housing Authority															0	
TTowns	Barre Housing Authority															0	
TTowns	Bellingham Housing Authority															0	
TTowns	Beverly Housing Authority															0	
TTowns	Blackstone Housing Authority															0	
TTowns	Braintree Housing Authority															0	
TTowns	Brewster Housing Authority															0	
TTowns	Bridgewater Housing Authority															0	
TTowns	Brockton Area Transit Authority															0	
TTowns	Brockton Multi-Service Center															0	
TTowns	Cambridge Housing Authority															0	
TTowns	Cambridge Redevelop. Authority															0	
TTowns	Canton Housing Authority															0	
TTowns	Cape Ann Transportation Author															0	
TTowns	Carver Housing Authority															0	
TTowns	Chatham Housing Authority															0	
TTowns	Chelsea Housing Authority															0	
TTowns	City of Boston															0	
TTowns	Clinton Housing Authority															0	
TTowns	Dalton Housing Authority															0	
TTowns	Dartmouth Housing Authority															0	
TTowns	Dennis Housing Authority															0	
TTowns	Dighton Housing Authority															0	
TTowns	Dukes County Reg Housing Auth															0	
TTowns	Fairhaven Housing Authority															0	
TTowns	Foxborough Housing Authority															0	
TTowns	Franklin County RTA															0	
TTowns	Gardner Redevelopment Authority															0	
TTowns	Great Barrington Housing Auth															0	
TTowns	Greater Lawrence Sanitary Dist.															0	
TTowns	Greenfield Housing Authority															0	
TTowns	Hamilton Housing Authority															0	
TTowns	Hanson Housing Authority															0	
TTowns	Holden Housing Authority															0	
TTowns	Hopedale Housing Authority															0	
TTowns	Lemuel Shattuck Hospital															0	
TTowns	Lennox Housing Authority															0	
TTowns	Longmeadow Housing Authority															0	

**Year 2000 User Group Meetings -
Not Attending**

Secre- tariat	Agency	1997												1998			# of UG Meetings
		Mar. 97	Apr. 97	May 1997	Jun. 97	Jul. 97	Aug. 97	Sep. 97	Oct. 97	Nov. 97	Dec. 97	Jan. 98	Feb. 98	Mar. 98			
TTowns	Ludlow Housing Authority																0
TTowns	Lynnfield Housing Authority																0
TTowns	Mansfield Housing Authority																0
TTowns	Marshfield Housing Authority																0
TTowns	Mashpee																0
TTowns	Merrimack Valley Planning Comm																0
TTowns	Merrimack Valley Reg Trans Auth																0
TTowns	Milford Housing Authority																0
TTowns	Milton Housing Authority																0
TTowns	Montachusett RTA																0
TTowns	Nahant Housing Authority																0
TTowns	Nantucket Housing Authority																0
TTowns	New Bedford Housing Authority																0
TTowns	North Adams Housing Authority																0
TTowns	North Andover Housing Authority																0
TTowns	Northboro Housing Authority																0
TTowns	Orange Housing Authority																0
TTowns	Oxford Housing Authority																0
TTowns	Pioneer Valley Transit Authority																0
TTowns	Provincetown Housing Authority																0
TTowns	Quincy Housing Authority																0
TTowns	Randolph Housing Authority																0
TTowns	Raynham Housing Authority																0
TTowns	Rowley Housing Authority																0
TTowns	Salisbury Housing Authority																0
TTowns	Sandwich Housing Authority																0
TTowns	Saugus Housing Authority																0
TTowns	Scituate Housing Authority																0
TTowns	Seekonk Housing Authority																0
TTowns	Sharon Housing Authority																0
TTowns	Somerset Housing Authority																0
TTowns	Somerville Housing Authority																0
TTowns	South Hadley Housing Authority																0
TTowns	Southwick Housing Authority																0
TTowns	Sterling Housing Authority																0
TTowns	Stockbridge Housing Authority																0
TTowns	Templeton Housing Authority																0
TTowns	Uxbridge Housing Authority																0
TTowns	Warren Housing Authority																0
TTowns	Wellesley Housing Authority																0
TTowns	West Brookfield Housing Authority																0
TTowns	West Newbury Housing Authority																0
TTowns	Westboro Housing Authority																0
TTowns	Westfield Housing Authority																0
TTowns	Williamstown Housing Authority																0
TTowns	Winchendon Housing Authority																0
TTowns	Winchester Housing Authority																0

Agency E-Mail Distribution List

NAME	AGENCY	E-MAIL
Adam Pearle	Community Development Finance Corporation	akpearle
Paula Almeida	Office of Victim Assistance	Almeida-VWA, Paula
Charlie Anderson	Department of Fish, Wildlife and Environmental Law Enforcement	Anderson-FWE, Charlie
Gary Brown	Bureau of Registration in Medicine	Brown-MED, Gary
James Buckley	House of Representatives	Buckley-HOU, James
Stan Burrows	Executive Office of Environmental Affairs	Burrows-ENV, Stan
Steve Cash	Department of Public Health	Cash-DPH, Steve
Jack Cole	Criminal Justice Training Council	Cole-EPS, Jack
Gwendolyn Damico	Information Technology Division	Damico-ITD, Gwendolyn
Dan Folloni	Information Technology Division	Dan Folloni
David MacKenzie	Mass Health and Education Finance	David MacKenzie
Mark Defrancisco	Appellate Tax Board	Defrancisco-ATB, Mark
Anthony Delgrosso	Department of Revenue	Delgrosso-DOR, Anthony
Mary Deyoung	Division of Standards	Deyoung-SCA, Mary
Dick Delorey	Salem State College	Dick Delorey
John Donnelly	Mass Rehabilitation Commission	Donnelly-MRC, John
Ann Downey	Board of Library Commission	Downey-BLC, Ann
Philip Dugas	Registry of Motor Vehicles	Dugas-RMV, Philip
Michael Dumont	Mass Office on Disability	Dumont-OHA, Michael
John Dunleavy	Mass Commission on Discrimination	Dunleavy-MCD, John
Susan Edmonds	Operational Services Division	Edmonds-OSD, Susan
Ellen Crotty	Mass Water Resources Authority	Ellen Crotty
Patricia English	Administrative law Appeal	English-ALA, Patricia
Brian Fore	Mass Commission for the Blind	Fore-MCB, Brian
Susan Foss	Office of the State Comptroller	Foss-OSC, Susan
Franklin Young	Commission Against Discrimination	Franklin Young
Joseph Galluccio	Department of Economic Development	Galluccio-SEA, Joseph
Jonathan Geer	Department of Environmental	Geer-DEM, Jonathan

Agency E-Mail Distribution List

	Management	
Russell Grant	Mass Highways Department	Grant-DPW, Russell
Gwen D'Amico	Mass Convention Authority	Gwen D'Amico
Amornrut Harnpukdipatima	Office of Transportation and Planning	Harnpukdipatima-TRP, Amornrut
Kim Hartford	Office of Film	Hartford-SEA, Kim
Timothy Healy	Division of Registration	Healy-REG, Timothy
Kathy Hines	Division of Health Care Financing and Policy	Hines-HCF, Kathy
Larry Hookey	Department of Mental Health	Hookey-DMH, Larry
Jack Hornfeldt	Executive Office of Health and Human Services	Hornfeldt-EHS, Jack
Christian Jacqz	Executive Office of Environmental Affairs	Jacqz-ENV, Christian
James McCaughey	Mass Housing Finance Agency	James McCaughey
James Proctor	Senate	James Proctor
Jane Volden	Administrative of Office of Trial Courts	Jane Volden
Stan Jankowski	Chelsea Soldiers Home	Jankowski-CHE, Stan
John F Jesensky	Human Resources Division	Jesensky-HRD, John F
John Beveridge	Office of the State Auditor	John Beveridge
Judy Langone	Secretary of State	Judy Langone
Karin McCarthy	Career Center Operations Group	Karin McCarthy
Martin Kaye	Office of Travel and Tourism	Kaye-SEA, Martin
Patricia Kelley	House of Representatives	Kelley-HOU, Patricia
James Kelly	Division of Banks	Kelly-DOB, James
Sylvia Killion	Department of Mental Health	Killion-DMH, Sylvia
Peggy Kraft	Department of Revenue	Kraft-DOR, Peggy
Frank Kulash	Executive Office of Environmental Affairs	Kulash-ENV, Frank
John Kupchaunis	Office of Consumer Affairs	Kupchaunis-OCD, John
Paul R Laliberte	Public Employees Retirement Board	Laliberte-PER, Paul R
Andrea Landry	Board of Higher Education	Landry-RGT, Andrea
Timothy Landy	Operational Services Division	Landy-OSD, Timothy
Bob L Lefaive	Holyoke soldiers Home	Lefaive-HLY, Bob L
Brad Leonard	Department of Social Services	Leonard-DSS, Brad

Agency E-Mail Distribution List

David Lewis	Registry of Motor Vehicles	Lewis-RMV, David
Robert Liberatore	Registry of Motor Vehicles	Liberatore-RMV, Robert
Barbara Lybarger	Mass Office on Disability	Lybarger-OHA-OHA, Barbara
Teresa Mace	Mass Rehabilitation Commission	Mace-MRC, Teresa
Marge Macevitt	Department of Public Health	Macevitt-DPH, Marge
Jack Maguire	Board of Higher Education	Maguire-RGT, Jack
Robert Maier	Bureau of Library Commissioners	Maier-BLC, Robert
Marcia King	Information Technology Division	Marcia King
Maritza Bond	Administrative Office of Trial Courts	Maritza Bond
Roger Mascoll	State Medical Examiner	Mascoll-EPS, Roger
George Mccarthy	Division of Banks	Mccarthy-DOB, George
Karen Middleton	Division of Environmental Affairs	Middleton-ENV, Karen
Maureen Molloy	Department of Public Safety	Molloy-DPS, Maureen
Gregory Nadeau	Department of Education	Nadeau-RGT, Gregory
Peter Navarro	Office of State Treasurer	Navarro-TRE, Peter
Neil Shain	Information Technology Division	Neil Shain
Brendan Oldham	Department of Mental Health	Oldham-DMH, Brendan
Patricia Wada	Information Technology Division	Patricia Wada
Brian Peek	District Attorneys Association	Peek-DAA, Brian
Peter Blaisdell	Career Center Operations Group	Peter Blaisdell
David Pollina-	Department of Environmental Protection	Pollina-EQE, David
Timothy Regan	Executive Office of Elder Affairs	Regan-ELD, Timothy
Mike Richards	Division of Apprentiship	Richards-EOL, Mike
Mike Ridge	Department of Environmental Management	Ridge-DEM, Mike
David Robbins	Metropolitan District Commission	Robbins-MDC, David
Robert Mallard	Mass Aeronautics Commission	Robert Mallard
Robert Ryan	Department of Capital Planning and Operations	Ryan-DCP-DCP, Robert

Agency E-Mail Distribution List

Deborah Ryan	Architectural Access Board	Ryan-EPS-EPS, Deborah
Theresa Sacco	Department of Insurance	Sacco-DOI, Theresa
Sandra Padellaro	Mass Bay Transportation Authority	Sandra Padellaro
Scott MacIntyre	Mass Housing Partnership fund	Scott MacIntyre
John Shontell	Office of Consumer Affairs and Business Regulations	Shontell-SCA, John
William Smith	Operational Services Division	Smith-OSD-OSD, William
Gail Soares	Department of Telecommunications and Energy	Soares-DPU, Gail
Kosta Spanos	Executive Office of Public Safety	Spanos-EPS-EPS, Kosta
Mark Spezzafero	Office of Victim Assistance	Spezzafero-VWA, Mark
Bruce Stebbins	Department of Economic Development	Stebbins-SEA, Bruce
Corinne Steele	Information Technology Division	Corinne Steele
Matt Stockwell	Division of Fire Safety	Stockwell-DFS, Matt
Suraffel Assefa	Mass Careers	Suraffel Assefa
Sallyann V Sweeney	Parole Board	Sweeney-PAR, Sallyann V
Michael Szymanski	Administrative Office of Administration and Finance	Szymanski-ANF, Michael
Scott Taberner	Department of Youth Services	Taberner-DYS, Scott
Karyn Thompson	State Office of Minority and Woman Owned Business	Thompson-ENV, Karyn
Bob Trombly	Department of Mental Retardation	Trombly-DMR, Bob
Joseph Vandeventer	State Racing Commission	Vandeventer-SRC, Joseph
John T Vasily	Department of Youth Services	Vasily-DYS, John T
David Villeneuve	State Office of Minority and Woman Owned Business	Villeneuve-SEA, David
Dan Walsh	Office of Child Care Services	Walsh-OFC, Dan
Dennis Warren	Department of Mental Retardation	Warren-DMR, Dennis
Phil Welton	Criminal Justice Programs	Welton-EPS-EPS, Phil
Rich Wentzel	Mass Emergency Management Agency	Wentzel-CDA, Rich
Steven Whittredge	Department of	Whittredge-CTV, Steven

Agency E-Mail Distribution List

	Telecommunications and Energy	
William Heuer	Information Technology Division	William Heuer
Hyun Yoo	Division of Veteran Services	Yoo-VET, Hyun
George Young	Bureau of State Office Buildings	Young-OSD, George
Ann Marie Tremontozzi	Department of Medical Assistance	Ann Marie Tremontozzi
Art Riccio	Committee for Public Council	Art Riccio
Catherine Bayliss	Department of Revenue	Bayliss-DOR, Catherine
Bill McDonald	UMASS Presidents Office	Bill McDonald
Bob McInnis	Information Technology Division	Bob McInnis
Brion Leary	Division of Industrial Accidents	Brion Leary
Jane Cadigan	Department of Mental Retardation	Cadigan-DMR, Jane
Craig Hall	Mass Developmental Disabilities Council	Craig Hall
Dan Buslovich	Department of Corrections	Dan Buslovich
Dan Wasilko	Mass Housing Financing Agency	Dan Wasilko
Elaine Socha	Information Technology Division	Elaine Socha
Antonio M Enrique	Executive Office of Public Safety	Enrique-EPS, Antonio M
Frank Koed	Office of Refugees and Immigrants	Frank Koed
Charles Hadley	Department of Public Safety	Hadley-EPS-EPS, Charles
Fran Healey	Mass Highways	Healey-DPW, Fran
John Bliss	Central Transportation and Planning	John Bliss
Joseph Champa	Teacher's Retirement Board	Joseph Champa
Prudence Lange	Office of Community Development	Lange-OCD, Prudence
Laura Chmielecki	Mass College of Arts	Laura Chmielecki
Lisa Lee	Group Insurance Commission	Lee-GIC, Lisa
Long Nguyen	Mass Aeronautics Commission	Long Nguyen
Martin Censullo	Criminal History Systems Board	Martin Censullo
Diedre Matthews	Department of Telecommunications and Energy	Matthews-DPU, Diedre
Maureen Chew	Criminal History Systems Bureau	Maureen Chew
James Murphy	Mass Highways	Murphy-DPW, James

Agency E-Mail Distribution List

Paul Walde	UMASS Dartmouth	Paul Walde
Peter Roberts	UMASS Presidents Office	Peter Roberts
Phyllis Daigle	Mass Port Authority	Phyllis Daigle
Jerry Polcari	Operational Services Division	Polcari-OSD, Jerry
Reza Rajaei	Office for Child Care Services	Rajaei-OFC, Reza
Raymone Washington	UMASS Boston	Raymone Washington
Rich Duggan	Administrative Office of Trial Courts	Rich Duggan
Robert Buchanan	Office of the State Auditor	Robert Buchanan
Robert Regan	Mass Water Resources Authority	Robert Regan
Sharon Wright	Department of Medical Assistance	Sharon Wright
Sheila Parker	Mass Development Finance Agency	Sheila Parker
Tom Smith	Budget Bureau	Smith-FAD-FAD, Tom
Paul Staruski	Department of Mental Health	Staruski-DMH, Paul
Tamara Anderson	Bridgewater State College	Tamara Anderson
Tony DaLoisio	Information Technology Division	Tony DaLoisio
David K Webster	Human Resources Division	Webster-HRD, David K
Yasuf Karacaoglu	Disabled Persons Protection Commission	Yasuf Karacaoglu

Y2K PMO Distribution List
No E-mail Addresses

NAME	AGENCY	ADDRESS
Steven Dick	Office of the Attorney General	One Ashburton Place, 20 th Floor Boston, MA 02108
MaryClare Querzoli	Office of the Attorney General	One Ashburton Place, 20 th Floor Boston, MA 02108
John Horan	Legislative Data Processing	Room 15, State House
Dick Burke	Div. of Employment and Training	19 Staniford St. Boston, MA 02114
Dan Ahern	Office of the Inspector General	One Ashburton Place, 13 th Floor Boston, MA 02108 FAX: 723-2334
Mary Kolesar	Office of the Inspector General	One Ashburton Place, 13 th Floor Boston, MA 02108 FAX: 723-2334
Anna Carter	University Information Systems UMass	100 Venture Way Hadley MA 01035
Anne Marie Quinlivan	State Ethics Commission	One Ashburton Place, Room 619 Boston, MA 02108
Mark Signore	MA Commission on Judicial Conduct	14 Beacon Street, Suite 102 Boston, MA 02108 FAX: 248-9938
Verlon Moore	CPCS	470 Atlantic Ave. Suite 700 Boston, MA 02210

Y2K PMO Liaison Guidelines

1 Background

Because of the criticality of the services provided by the HHS and Public Safety agencies, the Year 2000 (Y2K) Program Management Office (PMO) has designated special Y2K PMO liaisons:

- David Leach - HHS. David will also serve as liaison to Elder Affairs.
- Bob Lebel - Public Safety

The goal of the liaisons is to facilitate PMO communications with these critical agencies and promote the incorporation of best practices on agency projects to improve the likelihood of successful Year 2000 conversions.

2 Roles and Responsibilities

The Y2K PMO Liaisons are members of the Y2K PMO staff. Their Liaison role is expected to require about 50% of their time. As Liaisons they are responsible for the following:

- Collect, compile, and review agency Y2K project data from PMO interviews, auditor forms, etc.
- Support agencies' Y2K vendor management programs. Monitor PMO lists of compliant and non-compliant versions of common or widely used software, hardware, non-IT devices. Assist agencies in applying these lists to inventory.
- Assist agencies in planning the evaluation of non-IS equipment (phones, clocks, copiers, VCRs)
- Assist agencies in applying best practices to their Y2K efforts.
- Where appropriate, assist agencies with risk mitigation activities, e.g., review of project plans and schedules, participation in risk management activities.
- Report regularly on progress, identification of risks, etc. and on time use per agency.

The secretariats are responsible for

- Facilitating liaison communications with agencies, e.g., weekly or biweekly meetings with agency IT heads.
- Where appropriate, assist liaison in the analysis of agencies' Y2K project status and risk management activities.
- Providing office space, as appropriate, for liaison activities held off-site from liaison's normal work site.

3 Standard Reports for Liaisons

Liaisons shall prepare a weekly status report for their primary secretariat POC and the PMO describing their activities with the agencies. The recommended format for this report is attached.

Liaisons shall prepare a quarterly status report for their primary secretariat POC and the PMO summarizing the status of the agencies' Y2 projects. The recommended format for this report is attached.

RESULTS

The results of the study are presented in the following sections. The first section discusses the overall findings, while the subsequent sections provide a detailed analysis of the data. The results are presented in a clear and concise manner, allowing for a thorough understanding of the study's outcomes. The data is presented in a series of tables and figures, which are used to illustrate the key findings of the study. The results are discussed in the context of the research objectives, and the implications of the findings are explored. The study's conclusions are based on the results presented in this section, and the limitations of the study are also discussed. The results of the study are presented in a clear and concise manner, allowing for a thorough understanding of the study's outcomes. The data is presented in a series of tables and figures, which are used to illustrate the key findings of the study. The results are discussed in the context of the research objectives, and the implications of the findings are explored. The study's conclusions are based on the results presented in this section, and the limitations of the study are also discussed.

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DRAFT

Weekly Status Report for Y2K PMO Liaison *Liaison Name*

Reporting Period:

1.0 **Secretariat**

1.1 *Responsibilities*

1.2 *Activities*

1.3 *Action Items*

1.4 *Plan for Next Period*

Agency Communications

Agency	Date of Last Visit	Agency Concerns/Questions for PMO	PMO Concerns/Questions about Agency Project

2.0 **Y2K PMO**

DRAFT

Quarterly Status Report for Secretariat

PMO Liaison:

Reporting Period:

Y2K Project Status:

Agency	Exposure	% of MC which are Compliant	% of Essential which are Compliant	Desktop Status	Activities/Comments	Non-IT Status	Activities/Comments

Y2K Project Issues:

Agency	Exposure	Funding Concerns	Staffing Concerns	Other Risks	Mitigation Activities

Application Conversion Status:

Agency	# Mission Critical (MC) Systems still in conversion	MC Systems which are Behind Schedule for Completion by 12/31/98	# Essential Systems still in conversion	% of Essential which are Behind Schedule for Completion by 6/30/98

DRAFT



THE COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE FOR ADMINISTRATION AND FINANCE
FISCAL AFFAIRS DIVISION
STATE HOUSE, ROOM 272
BOSTON, MASSACHUSETTS 02133
(617) 727-2081 FAX (617) 727-1024

CHARLES D. BAKER
Secretary

THOMAS M. GRAF
Budget Director

TO: Secretariat and Department
Chief Fiscal Officers and Budget Directors

FROM: Thomas M. Graf, Budget Director *TMG*

DATE: July 18, 1997

RE: FY98 Spending Plan / FY99 Maintenance Estimate

The forms and instructions for the FY98 Spending Plan / FY99 Maintenance Estimate are available on the Fiscal Affairs Division's Intranet server at www.fad.state.ma.us. If your department is located within the Commonwealth's Wide Area Network, you should download the files from that site. If you cannot access that site, please E-mail Valerie.Mahoney@state.ma.us to request copies of the files. If you cannot receive files via E-mail, you should call Valerie at 727-2081 ext. 433 and arrange to get copies of the files on diskette. Those few departments which still are unable to complete the spending plan electronically should contact your budget analyst to arrange for hard copy forms and instructions.

Spending plans and maintenance estimates are to be completed and signed by all secretariats and non-secretariat departments according to the schedule beginning on page 4. Secretariats should coordinate departments' work so that secretariat-approved plans can be transmitted to the Fiscal Affairs Division by the given due dates. Signed hard copy is required only of the department-level summary forms. All account-level and subsidiary-level detailed back-up should be transmitted electronically only, preferably via the Fiscal Affairs Division's SQL server, or alternatively via diskette. Since this is now the third year that departments' connection to the Fiscal Affairs Division's SQL server is the standard method of communication, all departments should be utilizing it. If your department still is unable to do so, you definitely should accomplish during FY98 the systems upgrades necessary to enable you to connect with our server, and your spending plan should reflect any associated costs.

This year, we are piloting the use of standard queries which will enable department staff to download actual personnel, spending and revenue data at a very detailed level. These queries run against special tables that have been built on the Fiscal Affairs Division's SQL server from Data Warehouse information. These "push-button" queries download data into spreadsheet format, which then can be used by department staff to form the basis of your spending estimates. We hope that these queries are helpful, and we would appreciate feedback on how useful they are and suggestions for improvement. *Because department staff using the spending plan files with proper passwords now have*

access to sensitive personnel and expenditure data, it is more important than ever to protect your spending plan passwords. The Fiscal Affairs Division will provide generic passwords with limited security access to departments' systems staff for testing purposes, so that departments' budget staff do not need to share their passwords.

Department and secretariat senior managers should be aware of the following key points as your staff develop these plans, and you review and sign off on them:

- Department heads are responsible for ensuring that spending does not exceed the levels authorized in statute by the Legislature (minus any reversions). Where necessary to accomplish this, Critical Commitments must be undertaken. If a department is convinced that it will be required by forces beyond its control to spend in excess of its existing appropriations, this should be shown as a projected deficiency, and the circumstances fully explained in the Department Head's spending plan transmittal letter. Any such deficiencies must be discussed with your budget analyst well in advance of spending plan submission.
- During the past year, the State Auditor's Office and the Information Technology Division have been working with departments' information technology staff to assess and address the technological implications of the century date change. This year's spending plan package includes a Year 2000 System Compliance Costs form to summarize the spending necessary to ensure that your operational systems are able to provide uninterrupted service through the change in century. Departments are expected to accommodate Year 2000 compliance costs within existing funds. If this would cause serious cuts in other areas, Critical Commitment forms should be used to detail the impact of those cuts. The Year 2000 System Compliance Costs form must be completed for each department, and must be signed by the Department Head and responsible Cabinet Secretary.
- We are not imposing any specific, up-front restrictions on budgeting for personnel. Departments' spending plans should reflect the staffing pattern that department managers believe is necessary to best accomplish the department's mission within the funding available. Upon review of individual departments' plans, and following our examination of statewide hiring trends and fiscal conditions, we may need to work with you to revise those plans.
- Transfers out of the DD subsidiary are not allowed. Transfers out of the AA subsidiary are not allowed in accounts to which collective bargaining reserve transfers are proposed. Exceptions to this policy may be allowed to alleviate deficiencies which are beyond a department's control, but any such transfers must be discussed with your budget analyst well in advance of spending plan submission. There are no other special restrictions on the intersubsidiary transfers that departments may propose to meet your objectives. Intersubsidiary transfers should be proposed, wherever possible, to reduce or eliminate the potential need for deficiency appropriations. TS forms to accomplish the transfers in MMARS should not be submitted with the spending plan. Upon review of department plans, budget analysts will notify department staff about forwarding TS forms.
- Departments are instructed to budget for a 3% merit increment to base salary rates for managers in FY98, and to carry this into FY99. Plans must assume that FY98

costs will be absorbed within departments' existing funding. Departments also are instructed to budget for an additional 3% in FY99.

- In general, departments are instructed to assume the continuation of the compensation rates for non-management staff which were in effect in June 1997. The exceptions, where settled collective bargaining agreements require departments to increment the June 1997 rates, are listed on page 11 of the instructions. Detailed instructions on how to reflect the incremental costs of these agreements, as well as information on eligibility for reserve funding, are provided on pages 11 through 20 of the instructions.
- The maintenance estimate that we will develop is simply a projection of the amount that would be needed to maintain the June 1998 projected level of services through FY99. It does not constitute any sort of base "entitlement" in the budget process. Actual FY99 House 1 recommendations will need to be developed by taking into account the Administration's priorities and total anticipated FY99 revenue.

As soon as possible, you should make sure that you can open and use the files. If you plan to exchange data directly with the Fiscal Affairs Division's SQL server, you should attempt to download and transmit data from and to the SQL server. It is very important that you let us know by August 4 if you are not successful in opening or using the files, or exchanging data. Otherwise, we cannot guarantee that we will be able to provide you with support to transmit your plan by the due date.

I thank you and your staff in advance for the substantial work that I know goes into the completion of these plans. I hope that the improvements in technology, and the reduced requirements for hard-copy detail, will help to make that job go more smoothly. Please feel free to contact Fiscal Affairs Division staff if you have any questions on the forms or instructions. As always, I would urge you to involve your budget analyst in discussions about major spending plan issues which arise as you are working on your plans. Our early involvement usually improves the chances of successful resolution of problems, and prevents delays in approving the plans.

Schedule for Submission of Spending Plans to Fiscal Affairs Division

In order for the Fiscal Affairs Division to approve spending plans in a timely fashion, it is imperative that plans be signed off by Department Heads and Cabinet Secretaries, and transmitted to the Fiscal Affairs Division, no later than the dates shown below:

Judiciary		9/17/97
District Attorneys	9/5/97	
Executive Office	9/5/97	
Secretary of the Commonwealth	9/5/97	
Treasurer and Receiver-General		9/12/97
Emergency Finance Board		9/12/97
Lottery Commission	9/5/97	
Massachusetts Cultural Council	9/5/97	
State Auditor	9/5/97	
Attorney General	9/5/97	
Office of Victim and Witness Assistance	9/5/97	
State Ethics Commission	9/5/97	
Inspector General	9/5/97	
Office of Campaign and Political Finance		9/12/97
Disabled Persons Protection Commission	9/5/97	
Comptroller		9/12/97
Secretary of Administration and Finance	9/5/97	
Admin Agency for Developmental Disabilities	9/5/97	
Office of Dispute Resolution	9/5/97	
Fiscal Affairs Division	9/5/97	
Division of Capital Planning and Operations		9/17/97
Bureau of State Office Buildings		9/17/97
Office on Disability	9/5/97	
Civil Service Commission		9/12/97
Group Insurance Commission		9/12/97
Division of Administrative Law Appeals	9/5/97	
George Fingold Library		9/17/97
Mass Commission Against Discrimination	9/5/97	
Department of Revenue		9/17/97
Appellate Tax Board	9/5/97	
Department of Veterans' Services	9/5/97	
Human Resources Division		9/17/97
Operational Services Division		9/17/97
Information Technology Division		9/12/97
Environmental Affairs (All Agencies)		9/17/97
Secretary of Health and Human Services		9/12/97
Office for Refugees and Immigrants (Federal)	9/5/97	

Division of Medical Assistance	9/17/97
Division of Health Care Finance and Policy	9/12/97
Mass Commission for the Blind	9/5/97
Mass Rehabilitation Commission	9/5/97
Mass Commission for the Deaf	9/12/97
Office of Child Care Services	9/17/97
Soldiers' Homes	9/5/97
Department of Youth Services	9/12/97
Department of Transitional Assistance	9/17/97
Department of Public Health	9/17/97
Department of Social Services	9/17/97
Department of Mental Health	9/17/97
Department of Mental Retardation	9/12/97
Transportation and Construction (All Agencies)	9/12/97
Board of Library Commissioners	9/5/97
Department of Labor and Workforce Development	9/12/97
Division of Industrial Accidents	9/5/97
Labor Relations Commission	9/5/97
Joint Labor Management Committee	9/5/97
Board of Conciliation and Arbitration	9/5/97
Department of Housing and Community Development	9/12/97
Office of Consumer Affairs & Bus Reg (All Agencies)	9/12/97
Department of Economic Development	9/12/97
Department of Education	9/17/97
Higher Education (All Agencies)	9/17/97
Secretary of Public Safety	9/12/97
Office of the Chief Medical Examiner	9/12/97
Criminal History Systems Board	9/12/97
Board of Building Regulations	9/5/97
Architectural Access Board	9/5/97
Department of State Police	9/17/97
Criminal Justice Training Council	9/5/97
Department of Public Safety	9/12/97
Department of Fire Services	9/17/97
Registry of Motor Vehicles	9/12/97
Merit Rating Board	9/12/97
Committee on Criminal Justice	9/17/97
Military Division	9/5/97
Emergency Management Agency	9/5/97
Governor's Highway Safety Bureau	9/5/97
Department of Correction	9/17/97
Parole Board	9/12/97
Elder Affairs	9/12/97

COMMONWEALTH OF MASSACHUSETTS - FY98 SPENDING PLAN / FY99 MAINTENANCE ESTIMATE
YEAR 2000 SYSTEM COMPLIANCE COSTS

Department Code: AAA
 Y2K Contact Person:

Department:
 Telephone:

If your department has already assessed, remediated, and tested its systems to insure smooth Year 2000 operations, and no further costs are anticipated, please place an X to the right of this line and have the department head and secretary sign at bottom of page.

Our department has no year 2000 issues: ☐

Account Number	Account Type	Planned FY98				Forecast FY99			
		Staff	Contractor Services	Software Tools	All other	Staff	Contractor Services	Software Tools	All other
1. Assessment of Year 2000 Exposure (Inventory of systems, analysis of potentially defective date handling):									
Totals		0	0	0	0	0	0	0	0
2. Remediation (The conversion or replacement of software, including version upgrades, so that date/time data is accurately processed regardless of year and/or century)									
Totals		0	0	0	0	0	0	0	0
3. Testing (The testing of altered software, including chargeback for computer hardware and communication services.)									
Totals		0	0	0	0	0	0	0	0
Grand Totals		0	0	0	0	0	0	0	0
Account Type Summary									
01		0	0	0	0	0	0	0	0
02		0	0	0	0	0	0	0	0
03		0	0	0	0	0	0	0	0
04-I		0	0	0	0	0	0	0	0
04-F		0	0	0	0	0	0	0	0
Totals		0	0	0	0	0	0	0	0

Signature of Department Head

Date

Signature of Cabinet Secretary

Date

COMMONWEALTH OF MASSACHUSETTS - FY98 SPENDING PLAN / FY99 MAINTENANCE ESTIMATE

Department:

Critical Commitment Title:

Complete a CRITICAL COMMITMENT DETAIL form for each Critical Commitment that the Agency needs to undertake to live within the FY98 GAA, or to achieve other major policy objectives.

Sequence Number	Specific Action Steps	Completion Date
Number 1		
Number 2		
Number 3		
Number 4		
Number 5		

Affected Accounts		Acct Type	Incremental Fiscal Impact Relative to Rate of Spending without this Critical Commitment					
Number	Title		1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	FY98 Total	FY99 Total
							0	
							0	
							0	
							0	
							0	
							0	
							0	
							0	
							0	
							0	
		Total	0	0	0	0	0	0



You only have 1 year, 9 months, 27 days, 7 hours, 55 minutes, 14 seconds until the Year 2000

Commonwealth of Massachusetts



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<u>Meeting The Challenge - Ed.I (April 1997)</u>	<u>Standard letter to landlords: (Jan. 6, 1998)</u>
<u>Meeting The Challenge - Ed.II (October 1997)</u>	<u>PC BIOS and the Year 2000, A White Paper (Feb. 10 1997)</u>
<u>Auditors Y2K Report: (Feb. 3, 1998 - download file)</u>	<u>Blanket Vendor Services</u>
<u>ITD Data Center Agency Y2K Test Support Manual: (Jan. 10, 1998)</u>	
<u>Sample Year 2000 Test Plan (Feb. 20, 1998)</u>	

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Quarterly Information Technology Bulletins

The Information Technology Division produces a quarterly newsletter that is mailed to over 300 state agencies, staff, and citizens across the Commonwealth. The Information Technology Bulletin is also available on ITD's web site at <http://www.state.ma.us/itd/>. ITD publishes this newsletter as part of their mission to act as a clearinghouse for IT information. Issues typically deal with IT activities underway in various agencies, events that may have an impact on Commonwealth IT, and, since the Winter 1997 issue, at least two pages devoted to Year 2000. This chapter includes copies of the following issues:

- Winter 1997;
- Spring 1997;
- Summer 1997;
- Fall 1997; and
- Winter 1998.

INFORMATION TECHNOLOGY

BULLETIN

Vol. 4 No. 1

Executive Office For Administration & Finance
Information Technology Division

Winter 1998

DOR Commissioner Seeks More Efficient Government Through IT



Mitchell Adams believes that less paper means better government and he has the awards to prove it. As Commissioner of the Massachusetts Department of Revenue, Mr. Adams

has been a strong advocate of using information technology to help create a paperless environment and to make government more efficient. This advocacy led DOR to develop its innovative Telefile tax filing system which won the prestigious Computerworld Smithsonian Award in June.

This nationally recognized award honors those who have used information technology to improve society. DOR won the

award in the category of Government and Non-Profit Organizations for its Telefile system which allows certain taxpayers to file their returns by phone and for its Imaging system that uses data recognition technology. *(Please see the IT Bulletin's Winter 1997 Issue, Volume 3, Number 1 for a more detailed description of the system.)* Likening the awards ceremony in Washington, DC to the Academy Awards for Information Technology, Commissioner Adams said that while winning the award was exciting, it is also a testament to the vision and dedication of DOR staff. "Telefile was a bold initiative that had never been done before," he said. "Our staff saw that the technology was feasible and they worked hard to make sure that it was user friendly."

The results of that hard work can be demonstrated by the number of people who now file their taxes by telephone, eliminating the tons of paper forms that used to inundate DOR each year. For example, in the last tax season, a record 400,000 taxpayers utilized the Telefile system. As a result, taxpayers benefit through a quicker refund turnaround and the state reduces costs and increases efficiency.

Telefile can accommodate taxpayers who utilize the state's short form but that still leaves approximately 1.7 million people who must file the longer Form One. DOR has solved the high cost of processing these forms — which total about 100 tons of paper — by developing an imaging sys-

tem that captures all of the data on those forms. Through a unique partnership with Unisys, DOR developed a state-of-the-art system that has increased efficiency and reduced operating costs. Following the Commissioner's edict that only proven, off-the-shelf software be used, the system has already paid for itself in labor cost savings. "We can now capture 50% more data and record it more accurately, and we deliver better services because electronic images of the tax returns are available instantly to respond to taxpayer inquiries," said Commissioner Adams. Between the two new systems, the battle of paper against computers becomes no contest, as demonstrated by the table at the end of this story.

Even with these accomplishments in hand, Commissioner Adams is constantly seeking additional improvements. On January 23, DOR recorded its one millionth Telefiler, Kathleen Bligh from Medford. However, the Commissioner would like to see more taxpayers utilize the system. He also predicts that there will soon be a day when DOR will be able to electronically deposit the refund into the taxpayer's bank account when the telephone call is completed. For innovative tax filing options, see DOR's web site at <http://www.state.ma.us/dor>.

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DOR Commissioner

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HR/CMS UPDATE:

Information Session Scheduled for March

*"The project
is on schedule
to meet its
implementa-
tion timetable
in the Year
2000."*

As implementation of HR/CMS (Human Resources/Compensation Management System) moves forward, an informational session will be scheduled in late March in the Gardner Auditorium at the State House in Boston. At the session, user agencies and other interested parties will be given an update on the progress of HR/CMS.

Personnel Administrator Jim Hartnett of the Human Resources Division said that this project will provide an enterprise-wide human resource information and payroll system for the Commonwealth. It will replace islands of automation — the existing legacy systems — with a single, integrated system. He noted that since the project went "live" in July, the HR/CMS team headed by Patricia Wada has been working on a number of tasks, including a joint application design process (JAD) that focuses on a review of existing business practices, reviewing them against the packaged software, and developing a list of "gaps" that detail significant differences between the two. The JAD process and resulting gap analysis have entailed reviewing existing business functions such as: manage job classification and positions/budgets, on-cycle payroll, training and labor relations. This process is on track and should be completed in Feb-

ruary, with the exception of benefits administration. Once it is completed, the Executive Committee will determine a limited number of modifications to be added to the HR/CMS software and the project team will move into the next phase of the project, conceptual design.

Mr. Hartnett said the project team has also conducted a number of meetings with constitutional officers to provide updates, establish lines of communication and make sure everyone is aware of the major phases of the project and the implementation schedule. He also noted that the level of cooperation from all parties has been excellent. "The project is on schedule to meet its implementation timetable in the Year 2000," said Mr. Hartnett. He also cited a number of factors for the project's success to date, including the continued support of Secretary of Administration and Finance Charles Baker, the level of cooperation and support by and between the project's executive committee members, the leadership of Patricia Wada and her project team, the full participation from employees representing the various areas of state government and the quality of work being done by the Andersen Consulting project team staff. ♦

DOR Commissioner

Continued from page 1.

Mr. Adams has been Commissioner of Revenue since 1991. Prior to his appointment, he served in a variety of financial management and advisory positions in which he focused on developing systems and programs to maximize resources and revenues. As Vice Chancellor for Administration and Finance for the University of Massachusetts Medical Center in Worcester, he was the medical center's chief financial advisor. Before joining the medical center, he served four years as Dean of Finance and Business for Harvard Medical School. He also served as the Budget Director for Boston's Beth Israel Hospital. Commissioner Adams graduated cum laude from Harvard College and received a master's degree from the Harvard Business School. ♦

Paper

vs.

Computer

27 day refund turnaround

4 day Telefile turnaround

\$2.00 processing cost per return

\$1.51 cents per Imaged return,
\$1.25 per Telefile return

2 weeks to retrieve a tax
return from storage

Immediate data retrieval
available

2 acres required to store tax
returns

25 square feet of storage for one
year of digital tax returns

325 tax returns processed
per day per operator

618 tax returns processed per day
per operator

Source: MA DOR

Margaret Sullivan Named First Civilian MIS Director for State Police



Margaret Sullivan has been named MIS Director for the Massachusetts State Police. Ms. Sullivan, who was previously Director of Technical Services for the Massachusetts District Attorneys Association, became the first civilian to hold the MIS position for the State Police.

In her new position, Ms. Sullivan said she will focus on upgrading existing technology and implementing a number of ambitious programs. Upon her appointment last summer, Ms. Sullivan said her first order of business was to bring some cohesiveness to the agency's information technology systems.

"The State Police had been automated over an extended period of time which has led to inconsistencies in the implementation," she said. For example, the police had multiple e-mail packages which made electronic communication between various geographic areas difficult. The MIS Department is converting every office to Lotus Notes — allowing such basic functions as internet mail. It is expected that the conversion will be completed by June. In addition, the State Police will be upgrading PCs and software from WordPerfect to more current Microsoft applications.

Other major projects are planned, including the implementation of computer aided dispatch and records management software. Infrastructure is now being put in place that will connect all substations through a Wide Area Network and a pilot program has started on the implementation of mobile data which will connect officers in their cruisers to headquarters through the use of laptop computers. When fully implemented, there will be laptops in approximately 2,000 State Police vehicles. This function will allow instantaneous checks on license plates (to check on stolen vehicles, etc.) and individuals (to check for prior records, etc.). Officers will be able to send e-mail from their cruisers and file reports electronically. "This means less time on paper work and more time focused on policing," said Ms. Sullivan.

Ms. Sullivan said there are a number of other important technology implementations to come such as automating records management and replacing the overburdened Automated Fingerprint Identification System (AFIS). Work has already begun on records management. When it is completed the State Police will have the ability to collect statistical data which will help them direct resources to the appropriate areas. Ms. Sullivan said the MIS Department plans an RFR to replace the AFIS system. "It is a capacity issue," she said. "The current system is processing as many cards as is technically feasible. As more cities have the ability to transfer fingerprints electronically it will be critical that the processing speed and capacity are increased to the level where cards are handled in a timely manner for the submitting police departments."

While the implementation of these programs is a formidable task, Ms. Sullivan said she looks forward to the challenge. "It's a challenge to implement change with a small MIS department such as ours but we will be up to the task," she said. ♦

*"This means
less time on
paper work
and more
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Electronic Commerce

Electronic Commerce Conference Held in San Antonio

San Antonio, Texas was the site last December for a conference on Electronic Commerce at the State Government level, hosted by the National Association of State Information Resource Executives (NASIRE), the National Association of State Purchasing Officers (NASPO) and the National Association of State Auditors, Comptrollers and Treasurers (NASACT). There were 47 state governments represented, several federal agencies, and hundreds of participants. At the final policy session of the conference, the assembly unanimously approved a resolution on electronic commerce policies at the state level. In brief, the four areas dealt with were as follows:

- Adopt a simple, technology neutral and non-regulatory electronic signature and records legislation and create a uniform base-line of definitions, scope and effect for this type of legislation.
- Work through the state government initiated effort in the Internet Council of NACHA (see next column) to develop multi-state guidelines for the use of digital signatures and certification authorities. This is a private sector market based standards effort that is meant as an alternative to state-by-state or federal regulations in this area.
- Adopt the National Information Infrastructure Privacy Principles as a guide to systems requirements, business controls and future policy governing electronic commerce applications to ensure the privacy of individuals is protected in state government electronic transaction and records systems.
- Finally, it was resolved to accomplish this, state associations should agree to create a short term task force to further explore and develop the above policies and report back on more detailed policies.

CERTIFICATION AUTHORITY RATING AND TRUST TASK FORCE

(CARAT) of the National Automated Clearing House Association Internet Council (NACHA).

The Internet Council of NACHA is home to the CARAT Task Force. CARAT is working on the development of market-based rules and standards for the evaluation and rating of certification authorities. Through participation in the pilot, and research and involvement with other industry and government efforts related to certification authority accreditation and evaluation, task force members are striving to develop a uniform regimen of metrics, processes and standards, acceptable to the private and public sectors.

Three state associations- NASIRE, NASACT, NASPO (see previous column) — and their state government members have assumed a leadership role on this issue. Through membership to the Internet Council they are working with Federal government and private sector representatives to develop a market-based means to evaluate or rate the trustworthiness and performance of certification authorities issuing digital certificates as part of public key infrastructure (PKI) commerce solution. The intent of the project is to develop standards accepted by the market that enable sound decision making for organizations which accept digital certificates issued by an outside certification authority. Work is being conducted via the Internet Council as an open and participatory forum as an alternative to legislation or regulation.

The most recent meeting of CARAT was hosted by ITD in Boston in January. At this meeting, the group focused on a proposed work product presented 1/5/98 centered on the creation of open but bounded electronic commerce trading communities. Daniel Greenwood, of ITD, is co-chair of this Task Force.

Electronic Commerce

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More information on these two topics is available at: www.state.ma.us/itd/legal.

Electronic Commerce

C O N T I N U E D

Federal and State Electronic Commerce Policy Update

The Clinton Administration has continued to push a variety of curbs on the domestic use and export of encryption. This position has been controversial among industry, privacy and civil liberties groups that seek a secure electronic commerce marketplace which uses encryption. Federal legislation on the hill includes competing encryption bills (controlled and restricted vs available for use and sale); a bill by Congresswoman Eshoo that would require all federal forms to be available for submission over the Internet; a bill by Congressman Baker that would regulate and federally control electronic authentication companies and practices; a bill by Senator Bennet (not yet introduced) would create a special legal safe harbor for banks to do electronic commerce; and Congressman Castle has indicated his support for legislation that would simply remove legal barriers to electronic signatures and records (unclear when/whether we will see the bill filed). Underlying several federal bills is a policy controversy over whether or how much state laws pertaining to electronic commerce should be preempted by federal legislation.

Last year, Dan Greenwood of ITD, testified before the US House and the US Senate regarding the relationship between state and federal law in the areas of electronic commerce and information privacy. State legislation is steadily being enacted across the country that reflects the simple barrier removing approach advocated by the San Antonio resolution (see www.ilpf.org for a survey of state laws). Massachusetts draft legislation along these lines is being prepared for filing this session by the Cellucci Administration. The National Conference of Commissioners on Uniform State Law are also drafting legislation, including proposed Article 2B of the Uniform Commercial Code (dealing with the license of digital information) and the Electronic Transaction Act (ETA) (removing legal barriers to electronic records and signatures and clarifying state electronic contracting law in the public and private sectors). The ETA cites the draft Massachusetts legislation in several sections and the Commissioners have asked the Commonwealth to assist them in defining two sections of the uniform law (exceptions to the scope and the government transactions sections).

Online Government Task Force Report Planning Initiative

The Online Government Task Force (established by Louis Gutierrez, Commonwealth CIO) has concluded its final report. The Task Force has proceeded on the premise that state government should aggressively adopt online government solutions wherever they can be used to increase the efficiency and quality of government. The Task Force began their work by evaluating common applications which require varying amounts of security and authentication and then using those as examples to frame a Request for Information (RFI) on products and services to meet these needs. The Task Force also conducted a survey of existing and planned Online government projects throughout the Commonwealth. This survey provided an indication of current online government initiatives that are deemed important by agencies. The results of both efforts are detailed in the Task Force Report.

The Task Force report and recommendations have served as the basis of an ITD strategic planning initiative for electronic commerce and online government. The ultimate goal is to develop the infrastructure and guidance that will encourage agency innovations in this area while providing coordinated, consistent and secure access to state government services. The planning effort is coordinated by ITD's Strategic Planning Group (SPG).

As part of the plan, ITD staff will lead five interagency workgroups in the areas of Security, Policy, Technical Infrastructure and Support, Legal Policy, Application Guidance, and Common Business Processes. These workgroups will draft white papers, policy options and recommendations that will be presented for discussion at a Commonwealth Online Government Summit to be held in late Spring of this year. SPG will then draft the Commonwealth's Online Government Strategic Plan based on the Summit proceedings. Agencies can track the progress of this planning initiative by accessing ITD's Intranet site at <http://www.itd.state.ma.us>. ♦

Who's Doing What Regarding:

Y2K PMO Agency Interviews

ITD's Year 2000 Program Management Office (Y2K PMO) team is continuing its agency interview approach for collecting information on the Commonwealth's progress in meeting the Year 2000 challenge. While its July-October round of interviews focused on the general approaches being used by the various agencies to achieve compliance, its October-December round centered on identifying the status of mission critical and essential systems. Agencies with non-compliant mission critical systems are expected to have planned and launched remediation projects to ensure those systems will be corrected and returned to production no later than January 31, 1999. The deadline for essential systems is May 31, 1999. These dates will ensure agencies are ready for FY2000 which begins July 1, 1999.

Commonwealth Facilities and the Year 2000

Although most Year 2000 attention focuses on non-compliant information systems, another area which cannot be overlooked is embedded systems or automated devices that use embedded chips and program code to perform their functions. Of particular concern are those embedded systems that control access to facilities and provide maintenance functions for facilities: thermostat controls, elevators, alarm systems, heating and air conditioning systems, building access, and parking garage access. As part of their Year 2000 compliance, agencies must ensure that their offices and facilities will be habitable and accessible to their employees and the citizens of the Commonwealth.

State Owned Facilities: The Department of Capital Planning and Operations (DCPO) and the Bureau of State Office Buildings are responsible for Year 2000 compliance at the major state-owned buildings. DCPO reports the following compliance status for its buildings:

- Transportation Building at 10 Park Plaza in Boston: All systems (energy management, chiller control panel, security system, telephone system, and fire alarm system) are compliant. Plans are underway to remediate the elevators.

- At the State Office Building in Springfield, the energy management system, which includes air handlers, chillers, boilers, and lighting systems, is in remediation.
- At the Massachusetts Information Technology Center in Chelsea, the UPS system, computer room A/C, automatic temperature control, auto transfer switch gear, chillers, elevators, and security are all Y2K compliant. The telecommunications system is currently in the assessment phase and will be compliant by January 1, 1999.

The Bureau of State Office Buildings is responsible for the McCormack building at One Ashburton Place, the Saltonstall Building at 100 Cambridge Street, and the State House.

- The State House security system, phone system, and parking garage system are scheduled for remediation.
- The badge system for the McCormack and Saltonstall buildings is compliant.
- The elevators for the McCormack and Saltonstall buildings are not controlled by computers and therefore are Y2K compliant.

Non-State Owned or Leased Facilities: Agencies that rent space will have to contact their landlords about facility compliance. In an effort to aid the agencies in this process, the Y2K PMO has drafted a standard letter to landlords identifying key issues. A copy of this letter is available on the ITD Y2K web site: <http://www.magnet.state.ma.us/Y2K>. Agencies are encouraged to send this letter, modified to their specific needs, to their landlords to ensure that, in terms of their physical operations, it will be 'business as usual' on January 1, 2000.

Outreach To Local Organizations

A number of Commonwealth agencies have oversight responsibility for or close working relationships with local organizations and municipalities throughout the state. Some of these agencies are utilizing their access to and frequent contact with local organizations to aggressively increase Year 2000 awareness and promote best practices for achieving compliance. Local outreach

The Year 2000

methods include the use of web sites and electronic transfers of information and discussions of Y2K issues in questionnaires, at conferences, and at other gatherings of their constituents. Some examples include the following:

The Division of Banks (DOB) developed and distributed an Officer's Questionnaire to local banks and credit unions to collect information on management's plans for addressing the Year 2000. After the responses were reviewed, the institutions posing the greatest risks are being monitored. DOB is also publishing their regulatory concerns regarding transition to the Year 2000 on their web site.

The Division of Insurance (DOI) has taken a similar approach. In order to increase awareness of Y2K issues, they sent a survey to 95 domestic insurance companies. The results of the survey helped the DOI to determine each company's position and status for attaining Y2K compliance.

The Executive Office of Public Safety is in the process of making ITD's Year 2000 Compliance, Meeting the Challenge, Second Edition available electronically to local police and fire departments with which they correspond via e-mail.

ITD sponsored a Year 2000 workshop on January 24, 1998 at the Massachusetts Municipal Association's annual meeting. Representatives of more than 20 cities and towns attended the workshop which covered an overview of the problem, a discussion of the primary project phases, and the effect on cities and towns.

Year 2000 and the Federal Government

Many agencies that exchange data with the Federal Government have been concerned about the status of the federal Year 2000 compliance project. As of this writing, the Office of Management and Budget (OMB) has accelerated federal target dates for completion of remediation and implementation in order to "assure that agencies have sufficient time to test their mission-critical systems in production settings". Remediation, previously scheduled for completion by December 1998 has been moved to September 1998; implementation, previously scheduled for completion by November 1999 has been moved to March 1999.

In addition, OMB has announced several key target dates concerning state/Federal interfaces. Federal agencies are expected to complete their inventory of data exchanges with the states by February 1, 1998 and publish the format of and schedule for data exchanges with the states by March 1, 1998.

While some Federal agencies are on target with their remediation, OMB recognizes that the progress of a number of other agencies is problematic and it is not averse to using its authority to dictate how agencies spend their IT budgets in FY 1999. More information regarding the Federal Government's Year 2000 project can be found at: <http://www.cio.fed.gov/Y2Knov97.htm>

Y2K Odds and Ends

- The next Y2K Day will take place on March 19th, from 9 a.m. to 1:30 p.m. on the 21st floor at One Ashburton Place in Boston. Topics will include testing and testing tools.
- The PMO is developing a Year 2000 Statement of Compliance Status to help agencies document their compliance status for upper management and interfacing organizations. The statement will indicate what items are compliant and will provide a brief description of compliance criteria. It is expected that the Y2K Statement of Compliance will be available to the agencies by the time this bulletin goes to press.
- The Data Center in Chelsea has developed an Agency Year 2000 Test Support Manual which describes the resources that the Data Center can provide to agencies for testing and the steps which should be taken by agencies to ensure a successful test program. The manual is available on the ITD Y2K Web Site or by requesting a printed copy from the Y2K PMO by phone at 617-973-0907.
- A letter to vendors requesting Y2K compliance information has been drafted by the PMO and approved by ITD's legal staff. The letter, available on the ITD Y2K web site, requests that vendors list their products, each product's compliance status, and expected date of compliance. It also requires the signature of an authorized representative of the vendor.

Year 2000

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IT Bond II Update:

Some Early Successes

The Firearms License Imaging Program (FLIP)

Massachusetts General Law, Chapter 140, Section 123, requires all licensed gun dealers, as well as individual private citizens, to report the sale of any firearm to the Massachusetts Firearms Record Bureau (FRB). Between 1985 and 1997 alone, more than 720,000 gun sale transactions have been reported to the Bureau, and an average of one thousand (1,000) new sales are recorded each week.

The forms required to record a gun sale transaction are mailed to the FRB and, until recently, they were put in file drawers or boxes. Because of shortages of personnel and other resources, the information written on the various forms was never entered into any type of automated system. As a result, the massive amounts of data collected by the Bureau were of no benefit to anyone, especially police officers wishing to trace the origins of guns located at crime scenes or recovered in some other fashion. In fact, because of the way the paper records were stored, it could have taken an employee more than five hundred and eighty-three hours (almost seventy-four working days) to conduct a single search.

Realizing the importance of the data stored on gun sale records to public safety in general, and to law enforcement specifically, the Criminal History Systems Board embarked on a mission to automate the FRB's gun sale records. Using IT Bond II funds, the agency enlisted the services of IDP, Incorporated, located in Sudbury, Massachusetts, to build an imaging system and to supply the software and indexing services necessary to create and populate a LAN-based electronic index. As a result, all of the FRB's gun sale records have now been digitized and placed on CD-ROM. In addition, FRB personnel have PC access to the LAN-based image index, allowing them to search the gun sale files for individual purchases in seconds and to view and/or print images of individual gun sale records. In the first month of the system's availability, the Bureau was able to conduct gun traces for more than 20 police departments and Federal law enforcement agencies, assisting them in on-going investigations involving firearms related crimes.

Auditor's Hardware Improvements Enable Advanced Applications

The Office of State Auditor A. Joseph DeNucci is using its IT Bond II funds to rework the manner in which audit information is collected, analyzed, and disseminated. Prior to the release of IT Bond II funds, the OSA relied exclusively on an antiquated Wang VS for word processing and database applications. The computer hardware inventory consisted of a number of Wang dumb terminals augmented by a few dozen PCs, only a few of which were Pentium class, wired into the Wang VS. These computers were used primarily for the production of audit reports and for administrative purposes. There were only a few notebook computers assigned to field operations and they were of the 486/33 class. The sheer lack of computers and software, combined with the age of the existing computers, prevented the OSA from taking advantage of the new technology in its audit work and in its day to day business.

Since the release of its IT Bond II funds, OSA has developed and installed an Enterprise Network consisting of seven LANs spread throughout its offices in the Commonwealth. This network brings to the OSA a tremendously enhanced level of connectivity. OSA Regional Offices are in direct communication with the administrative center as well as with all of the other regional sites. All OSA employees are linked to an Email system allowing for nearly instantaneous transfer of information and documents. The only 486 class computers remaining in use are those used to convert old Wang Documents to Microsoft Word documents.

Individual field auditors now have access to the Information Warehouse and other resources from remote sites, eliminating the need to travel either to a regional office or into Boston to access this information. They can communicate with the regional offices and administrative centers from remote audit sites and communicate with managers and audit supervisors via Email through the remote access capabilities of the network. The network removed some of the delays that time and distance impose on the audit process.

IT Bond II Update

Continued on page 10

"TAB" Assists Agencies in Meeting Their Telecom Needs

Numerous changes in both the telecommunications industry and technology have had a great impact on how Commonwealth agencies accomplish their specific mission. The emergence of innovative service and equipment offerings from a growing number of companies has led to a greater demand by agency personnel and the general public for more advanced features. The Commonwealth's totally revised procurement procedures as well as innovative contract features have presented Agencies with more cost effective and efficient ways to process their incoming and outgoing calls, provide automated information delivery, and increase "customer" satisfaction.

The Telecommunications Advisory Board (TAB) was formed to assist agencies in meeting these growing information needs. The TAB is an informal group made up of individuals from various agencies who have one thing in common: they are responsible for their agency's telecommunications systems.

Formed under the direction of Frank Burns, Manager of Information Services for the Communications Services Bureau at ITD, the TAB presents an opportunity for agencies to share information regarding vendor offerings, billing issues, new services, system management and much more. Each month the TAB meets to discuss current issues in the telecommunications industry, recently completed procurements, as well as issues directly affecting agency systems and performance. In addition, the TAB conducts informational sessions provided by vendors and other telecommunications professionals to keep agency personnel aware of the latest products and services.

"We believe that the agency itself is in the best position to know the optimum solution for their telecom needs," stated Mr. Burns. "The TAB allows members to make informed decisions based

on current information and other agencies' experience with the same service, product or vendor."

The TAB, facilitated by ITD/CSB, is open to all agencies and individuals at all levels of experience. "The best part of the TAB is that you can attend those sessions or seminars that fit your level of experience or interests," Burns said. "We've had sessions which provide telecommunications basics as well as advanced computer telephony applications."

An example of the type of services provided by the TAB were the four seminars instructing agencies on how to insure that their systems were ready for the new area code changes taking place in Eastern Massachusetts.

TAB members have also served as members of Procurement Management Teams (PMTs) for various statewide telecommunications contracts such as the Centrex Services Contract, the Premises Based Telephone System Contract and the Telephone System Maintenance Services contract.

The TAB continues to evolve as the telecommunications industry and agency needs change. In the next few months, the TAB will begin a series of seminars on various topics including advanced messaging (voice, fax and e-mail), how to use the Internet, and telecommunications system management.

"Our goal is to provide agencies with the information they desire most," explained Mr. Burns. "The TAB will continue to adapt to the needs presented by its members — the agencies — and serve as that information source into the future."

For information on the Telecommunications Advisory Board, contact Frank Burns at 617-973-0080 or at Frank.Burns@state.ma.us. ♦

Year 2000

Continued from page 7.

Auditor's Year 2000 Report

On February 3, 1998 the Office of the State Auditor, A. Joseph DeNucci, issued its 'Report on the Preparedness of the Commonwealth of Massachusetts to Address the Year 2000 Computer Date Issue.' The report is available at the Auditor's web site, <http://www.magnet.state.ma.us/sao/>, or at the Commonwealth's Y2K site, <http://www.magnet.state.ma.us/y2K/>. ♦

Motor Voter Moving Forward

The Commonwealth's Motor Voter system, having overcome some initial start-up problems, is now fully implemented and gaining new supporters.

Under the federal National Voter Registration Act, Massachusetts was required to allow residents the opportunity to register to vote when applying for or renewing a driver's license. This required a new system that would not only connect the Secretary of State's Office with the Registry of Motor Vehicles, but it also required a direct connection to every town clerk's office in the Commonwealth. After replacing the vendor that had been chosen prior to his election, Secretary of State William Galvin and his staff worked to address the complexities created by the Motor Voter law and implement the system statewide in a way that would meet and exceed the requirements of the law.

With the exception of the Elizabeth Islands town of Gosnold (which has no direct telephone line to the mainland), the clerk's office in every city and town in Massachusetts is now connected to the Secretary of State's Office. The Secretary's Chief of Staff Jack McCarthy said that with the system in place, there has been an increase of approximately 100,000 additional voters since 1994. The system has also resulted in increased efficiencies for the Secretary of State's Office and the town clerks.

For example, when they register a new voter, town or city clerks can search the data base for duplicates and produce a cleaner list for their election activities. The system has also made it easier

to certify signatures on initiative petitions — a time consuming task that frequently missed duplicate signatures. Mr. McCarthy said that as the clerks become more familiar with the system, particularly those that use Microsoft Access, they are becoming more comfortable with it.

The system has come along slowly, but now some of our earliest critics have become the system's most vocal supporters," said Mr. McCarthy. While he is pleased with the results to date, Mr. McCarthy also noted that there is still some work to be done,

citing his desire to "tighten up" the flow of information between the Registry of Motor Vehicles and his office. The Secretary is also exploring the possibility of sharing the system with other agencies.

"I believe that we are the only agency with a direct link to every city and town and that may open up some opportunities for others," he said. Because town clerks issue hunting, fishing and other licenses, Mr. McCarthy pointed out that there may be a benefit in the motor voter system to an agency such as Fisheries and Wildlife which must keep track of each license issued. With the project's success, other states are looking at the system, as well.

Representatives from Minnesota, Michigan, Texas and Canada have already come to view the system. "No other state has comparable technology in place," said Mr. McCarthy. "Once again, Massachusetts is setting the standard."

For more information, call Jack McCarthy at 617-727-9180. ♦

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comparable
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said Mr. McCarthy.
"Once again,
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is setting the
standard."*

IT Bond II Update

Continued from page 8.

As the project moves into the second phase, its focus has shifted from the acquisition and deployment of resources to the design and implementation of an audit process that will take advantage of the new technology. This phase includes the design of audit workpapers for the specific and somewhat unique needs of OSA. In addition, this phase will see the conversion and migration of data from the Wang VS to a new system designed to utilize the new technology. The changes currently being planned include a database that will provide the information needed for audit scheduling and tracking, as well as housing the data for new administrative and personnel systems. Over the next 18 to 24 months, OSA will be developing and implementing new audit programs and procedures that exploit the new advances in technology. ♦

New Data Center Options and Opportunities

The change to CMOS (Complementary metaloxide semiconductor) enterprise servers at ITD's Data Center located at the Massachusetts Information Technology Center (MITC) in Chelsea has cut the floor space required for "mainframes" from 1,000 square feet to 44 square feet. The change to CMOS has cut the dollars being spent on CPU power usage from \$12,000 per month to about \$500 per month.

CMOS includes ESCON (Enterprise System Connectivity) optical fiber connections between a mainframe and its peripherals that replace the cumbersome cables under the computer room floor. The ESCON fiber connections increase the speed between CPU and peripherals from 4mb per second to 17mb per second, yielding better processing speed and faster throughput.

ITD's Data Center mission is to increase service and reduce cost while continuing to meet the needs of its customers. The new servers decrease cycle time by 27% which means that on-lines can be kept up longer. And since the over-night cycles end sooner, applications like the Commonwealth's Information Warehouse can be brought up earlier. So CMOS will increase applications' availability to users.

But according to Ralph Ragucci, Data Center Director, the real story about the change to CMOS is how it positions the Data Center for the future. Having installed the new enterprise server to replace its earlier mainframes, ITD is now able to install a new operating system, Open System 390 (OS390) with its broader range of capabilities. CMOS with OS390 will be able to run Oracle, Unix, NT, Java, and GUI tools on this "mainframe". This means that the new enterprise server, while continuing to support traditional mainframe protocols and applications, will also be able to support Web development and Electronic Commerce within the security and recoverability of the "mainframe" environment. The new architecture also enables integrating the mid-range environment into the new "mainframe" environment and potentially having fewer and more stable servers to manage and support in the future. In this new environment where client/server systems will co-exist with "mainframe" systems, developers will be able to utilize the best capabilities offered by both.

CMOS was installed at MITC in mid-December. The OS390 installation will be completed by June 1998. OS390 is Year 2000 certified and supports logical partitions (LPAR) which will enable establishing a region for Year 2000 testing with future dates on the same box while continuing day-to-day processing using current dates. These attributes will facilitate the Data Center's remediation and testing of all the hundreds of pieces of software that support applications - as well as facilitating applications testing itself.

After completing the OS390 installation, ITD's Data Center will be able to offer new services such as distributed printing. This will enable high-speed laser printing on 8 1/2 by 11 inch paper from systems located elsewhere on different platforms but networked directly to the Data Center printer using a TCP/IP connection. The printers support graphics that will permit printing "forms" and data simultaneously, saving the time and cost of printing special forms. Distributed printing will also improve the service options available through DocumentDirect and ViewDirect where it is now possible to view reports on-line and print only those pages needed in hard copy.

To streamline the management of the IT infrastructure and provide comprehensive and proactive control and monitoring of the mainframe, client server, and network resources, ITD will offer an integrated enterprise management solution. This will enable the Data Center and its users to manage all IT resources, encompassing heterogeneous networks, systems, applications, and databases. The integrated management offering will cover network discovery, topology, performance, alerts, events and status, security, software distribution, storage, workload, help desk, and change management.

To take advantage of these new Data Center options and opportunities - or for more information - contact Ralph Ragucci at 617-660-4401 or at Ralph.Ragucci@state.ma.us. ♦

INFORMATION TECHNOLOGY DIVISION

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The *Information Technology Bulletin* is a quarterly newsletter of ITD's Strategic Planning Group. One of SPG's tasks is to act as a clearinghouse for IT information. This publication furthers that goal. Please send correspondence to Managing Editor, Elaine Socha, the Information Technology Bulletin, Room 801, One Ashburton Place, Boston, MA 02108.

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This publication is also available on the Web at
<http://www.magnet.state.ma.us/itd/bulletin/>

Next publication: Spring 1998

A MESSAGE FROM THE CIO

Many of you, for various reasons, are planning to implement or grow Windows NT-based departmental networks.

The design of most networks is usually, as the saying goes, a "non-trivial" task. ITD's Network Applications Planning Group has worked with Systems Engineering Inc. and New Technology Partners to put together design guidelines for Windows NT networks.

The resulting document includes helpful insights into domain setup strategies, naming conventions, and considerations for eventually upgrading to the "active directory" in Windows NT 5.0.

For executive departments this guidance should be construed as official.

Pick up a copy at <http://www.magnet.state.ma.us/itd/>

T. Louis Gutierrez

INFORMATION TECHNOLOGY

B U L L E T I N

Vol. 3 No. 4

Executive Office For Administration & Finance
Information Technology Division

Fall 1997

Comptroller says interoperability and data exchange are keys to government success



At the Office of the State Comptroller (OSC), the reliance on information technology has become a way of life. According to Comptroller William Kilmartin, OSC

made a decision ten years ago to focus on the use of information technology. "We now live, breathe and die by it," he joked.

The Comptroller's Office had a number of successes with IT applications stemming from IT Bond I such as the Billing and Accounts Receivable Subsystem (BARS), the Payroll Cost Reporting System (PCRS), the Project Accounting and Reporting System (PARS), a new debt management system, and the Information Warehouse. These projects

have redefined the way the Commonwealth does business and generated tens of millions of dollars in annual and ongoing savings or revenue increases.

With the endorsement of the Governor and the Legislature, and funding set forth in IT Bond II, Mr. Kilmartin and his staff are building upon these prior successes and focusing on a new agenda broadly labeled "electronic commerce". One project from the agenda is Electronic Benefits Transfer (EBT). As reported in earlier issues (Spring 95 and Winter 96), this program provides debit cards to recipients of Food Stamps, Transitional Assistance for Needy Families, and Emergency Aid for Elderly, Disabled and Children. EBT has not only saved the Commonwealth money but has won the support of benefit recipients, food merchants and the banking industry as well.

Other aspects of the electronic commerce agenda include a project to remediate MMARS for the Year 2000, electronic data interchange (EDI) and electronic funds transfer (EFT). The Comptroller said that inherent efficiencies and cost savings make these and other uses of information technology a given. As an example, he pointed to the disbursement of checks and a joint project with the Office of the State Treasurer. In 1993, there were approximately 16 million disbursement events -- 14 million of those were done by paper checks and 2 million by EFT. In 1997, a smaller proportion are done by paper and the rest by EBT or EFT. The cost saving from that change is

tremendous -- the cost of a paper check disbursement can range from forty-three cents to \$1.50 while the same electronic funds transfer has an average cost of five or six cents.

Mr. Kilmartin also sees cost savings and increased efficiency in providing additional automated support to procurement reform. Consistent with this emphasis, OSC will be launching several projects under the name of MMARS WEB that will involve the interactive use of web browsers and other technologies conveying information and supporting secure transactions between business partners over the Internet. (For more information, see the Division of Banks story on page 2.)

The Comptroller's Office has organized to focus on critical business processes, for example, managing revenue or managing payments. And a dedicated group of technology expertise under the direction of Deputy Comptroller Susan Kanak has been created to provide technology support and assure project interoperability across such business lines. OSC is committed to support information technology projects in an environment of interdepartmental cooperation, ranging from assisting departments with interfaces to MMARS to full participation in the new statewide Human Resource and Compensation Management System (HR/CMS).

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Comptroller Article

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State Job Postings Now On-Line

James J. Hartnett, Jr., State Personnel Administrator, said that the new Commonwealth Employment Opportunities (CEO) system had its genesis last November when A&F Secretary Charles D. Baker came up with the idea of creating an electronic jobs posting—something similar to an effort that had just been started by the federal government. When Chief Information Officer Louis Gutierrez was approached about the initiative, his response was, "I will do whatever is necessary to make it happen." This kind of cooperation and teamwork between the Human Resources Division (HRD) and the Information Technology Division (ITD) was the reason why this initiative became a reality in Massachusetts. Staff from HRD and ITD immediately began to work together to establish the system and by June a pilot was in place. One of the challenges facing the system was that not every agency was on the state's intranet which meant that they did not have access to input their data. However, that problem should soon be solved because of requirements being implemented for HR/CMS.

Even at this early stage, the system has been a great success. "There never was a central job posting for the Commonwealth before CEO," Mr. Hartnett said. "Now everyone has equal access to the same information." And how has the response been from the public? "Agencies are telling us that they are saving advertising costs and receiving appropriate resumes - and lots of them."

The CEO system offers a comprehensive listing over the Internet of current job openings in Massachusetts state government. Currently, there are approximately 250 openings that are listed on the site, which can be found at <http://www.state.ma.us/hrd/>. According to Fran Fahey, who helped implement the system at HRD, most state agencies are now included and there are others that are still in the process of getting their information onto the site which began in August.

Linda Lynn-Weaver, who now manages CEO for HRD, stated, "Over the years, the Department of Personnel Administration — now the Human Resources Division — had people coming into the office constantly, wanting to know about positions available in state government. Starting in 1993, HRD began maintaining job postings manually, but only for management positions." Ms. Lynn-Weaver credits a great effort by human resources staff at executive offices and agencies, as well as at HRD, with developing the manual job posting system into today's state-of-the-art Web-based version. "This effort has produced a system with a full range of positions posted to a world wide applicant pool." ♦

Division of Banks pilot puts a premium on security

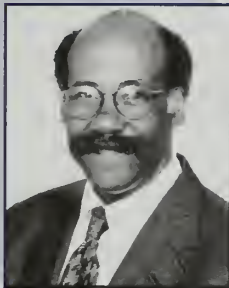
Every week since 1989, the Division of Banks has been compiling information on the interest rates charged by financial institutions and mortgage companies throughout the state. Through a survey that generates an average of 150 responses, the Division gathers the information for inclusion in a Weekly Shopper's Credit Guide. The Guide is then sent to newspapers and other publications to provide consumers with updated interest rate information.

To qualify for inclusion in the weekly guide, a participant must be a licensed mortgage lender or a state or federally chartered financial institution. Every institution which chooses to participate in this voluntary program fills out a form containing pertinent information on home and auto loan interest rates. Currently, the data is mailed or faxed to the Division and then manually entered by Division staff. To improve the efficiency of the operation, the Division of Banks, the Office of Consumer Affairs and the Information Technology Division, in cooperation with CyberTrust, a division of GTE, have developed an Internet based pilot application which automates the Weekly Shopper's Credit Guide.

What makes this project unique is that for the first time the Commonwealth will have the ability to update an on-line data base over the Internet in a secure manner using digital certificates which provide encryption and authentication. Encryption protects the transactions from being read or altered if they are intercepted on the Internet. Authentication ensures that both parties are identified to one another before access to the data base is provided. "The Shopper's Credit Guide requires that we are able to validate the identity of who is sending us the information as well as the integrity of the information itself, said Consumer Affairs SIO John Shontell. "For example, before we post interest rates for BankBoston, we need to be sure that BankBoston did, in fact, send us those rates."

The first pilot bank posted an interest rate electronically on October 7. Mr. Shontell said the long term objective of the pilot project is to provide more on-line services to consumers. However, many of those services will require additional levels of security and authentication similar to those that the pilot will provide. "This is just the beginning of our efforts to make government more user friendly," he said. Those who are interested in seeing the information provided by the Weekly Shopper's Credit Guide will be able to find it at <http://www.state.ma.us/dob/> when the project becomes fully operational. ♦

Stan Burrows is New Environmental SIO



The slogan on the Executive Office of Environmental Affairs (EOEA) goal sheet says "People Making it Happen". One person who is at EOEA to make it easier for people to make things happen is the new Secretariat Information Officer Stanley W. Burrows. Mr. Burrows came to the Commonwealth from the Arbitron Company in New York where he served as Chief Information

Officer. Prior to that he worked for Lotus Development and Digital Equipment, and has previous experience in state government when he served as Assistant Secretary for Systems for the Executive Office of Human Services. Mr. Burrows started as EOEA's SIO in August and he did not waste any time in putting together his vision for the Executive Office of Environmental Affairs and its agencies.

Mr. Burrows' appointment in August coincided with the release of a consultant's report that examined the use of information technology at EOEA. Mr. Burrows said EOEA knew that to accomplish what was needed for the future, it was necessary to a) get some advice from consultants and b) recruit a CIO. The study by CompuCom found that EOEA had no overall plan or direction for its IT systems. Instead, there was a loose confederation of "cooperative" information system groups with little standardization, documentation or consistency. "For example, there were some agencies with a strong commitment to information technology and there were some using old desktops that were not Windows capable," said Mr. Burrows.

The consultants made a number of recommendations that Mr. Burrows is now in the process of reviewing. Among those suggestions were the following:

- Outsource all WAN operations to ITD
- Involve the SIO in all policy decisions
- Reorganize IS reporting to the SIO
- Document and modernize the data center
- Modernize the network
- Centralize the help desk function
- Migrate the network through attrition to NT

As part of his review, Mr. Burrows said he is trying to utilize the report to maximize its benefits given the limited resources available. The report has been made available for review and discussion and certain recommendations will be implemented. One of the challenges the SIO faces in reaching some of the goals outlined in the report is in modernizing the systems in certain EOEA agencies and bringing the entire secretariat up to a proper standard. "It is unacceptable to have old technology that can not accommodate user interface throughout the secretariat," he said.

*"I want
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team."*

As SIO, Mr. Burrows says he will take the lead in bringing the necessary changes about. A secretariat wide informations system strategic plan is now in the draft stages which should start the process. "I want our agencies to act like a team," said Mr. Burrows. "We need to develop a single set of high priority initiatives for the entire secretariat-- in that way we can accomplish more." The new SIO added that a single strategy can help eliminate waste and overlap while adding structure and discipline to application development.

Mr. Burrows said in his role as SIO he must seek ways to maximize the benefits of the limited resources that are available while at the same time creating a fair prioritization for information systems within the secretariat. To that end he is seeking to enlist the assistance of IS managers within EOEA agencies to help draft parts of the strategic plan that are close to them. When the plan is completed Mr. Burrows said he will present it to all of the secretariat IS managers. "Once it has been implemented it will be difficult to do things that are not consistent with the plan," he said. ♦

Secretary Baker on the Year 2000



ARGEO PAUL CELLUCCI
GOVERNOR

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To: All Secretaries and Department Heads
From: Charles D. Baker, *cmh* Secretary, EOAF
Subject: Year 2000 Compliance
Date: September 29, 1997

We face a unique challenge in the history of Commonwealth operations – a turn of the century, coupled with heavy reliance on automated operational systems.

Therefore, effective immediately, it is ordered that:

1. Uninterrupted turn-of-century service delivery is each agency's top operational planning priority.
2. The management of each agency of the Commonwealth is responsible for assessing its Year 2000 preparedness and bringing its systems into compliance, or devising replacement and contingency plans for insuring smooth operations through the turn of the century, and having such assessments and plans committed to writing.
3. All purchases by Commonwealth agencies of new software, systems, enhancements or equipment shall be Year 2000 compliant.
4. New acquisitions which do not address *specifically identified* Year 2000 deficiencies in older systems should not be put forth as "Year 2000" initiatives.

Agencies are directed to review planned and ongoing technology initiatives in light of this directive and suspend all such initiatives which detract from Year 2000 preparedness efforts, other than those specifically mandated by statewide directives or required by law.

The Information Technology Division, through its Year 2000 Project Management Office, will continue to offer assistance to agencies in their Year 2000 compliance efforts. The Operational Services Division is available to assist with technology procurement matters related to Year 2000 compliance. Please feel free to contact these agencies.



Who's Doing What Regarding:

The Year 2000

Year 2000 Events

The next Massachusetts Government Year 2000 User Group meeting will take place on January 13, 1998 on the 21st floor at One Ashburton Place in Boston. This group has grown in recent months to the extent of needing a larger space for the monthly meetings. See the Resources option at <http://www.magnet.state.ma.us/y2k/> for the list of future meeting dates.

DET and DOR Support Y2K Project Launch Workshop

Dick Burke of DET and Catherine Bayliss of DOR shared their real-world Y2K project experiences at ITD's September Y2K Project Launch Workshop. Their insights and experiences in project organization, goals, initial activities, and awareness gave eight agencies a great leg-up toward establishing and managing Y2K projects more effectively.

Year 2000 Reference Book, 2nd Edition

At the October 9, 1997 Year 2000 Day, ITD introduced the second edition of Year 2000 Compliance: Meeting the Challenge. The second edition contains much more and detailed information about Y2K project planning, standards and contract guidance, blanket vendors who have signed the Year 2000 warranty, a number of resources providing useful Y2K information for all levels of agency staff, and a list of over 60 Web sites.

The second edition of Year 2000 Compliance: Meeting the Challenge is accessible at <http://www.magnet.state.ma.us/y2k/>. Copies are also available at Massachusetts Government Year 2000 User Group meetings or from Marcia King at 617-973-0711 or at Marcia.King@state.ma.us.

Y2K PMO Interviews Agencies, Highlights Some Issues

ITD's Year 2000 Program Management Office (PMO) team spent most of August and September interviewing agencies to collect information on the Commonwealth's progress in meeting the Y2K challenge. The following are issues that need to be addressed:

DOCUMENTATION. The PMO is encouraging agencies to develop the Y2K Project documentation that will aid communications with senior management and end-users as well as within the project team, provide support for spending plans, and assist project management and control. The PMO recommends that agencies keep the formats simple so that the documents can be easily maintained. Smaller agencies can probably keep all this information in a small binder.

PC COMPLIANCE. Many agencies with older systems are uncertain as to an approach for bringing them into compliance. The PMO is working with the agencies on a standard approach.

PC UPGRADE AS BASIS FOR "COMPLIANCE". Many agencies are basing their compliance status on the fact that they have brand new PCs and MS Office 95 or 97. While this definitely reduces their overall risk, it does not relieve them of the need to inventory and assess their PC applications, phone systems, LANs, and other "non-IT" devices. In particular, Access users must be made aware that an upgrade alone does not ensure compliance. An unaware Access user can develop non-compliant Access applications on brand new PCs with MS Office 95 or 97.

RELIANCE ON BRAND NEW REPLACEMENT SYSTEMS. Some agencies are planning to replace non-compliant mission-critical systems. Since most new developments require long lead times, this strategy adds additional schedule risk to the Y2K project. If the new system is going to fulfill a mission critical function, it should be in production by January 1, 1999, which is just 12 months away.

COSTS/FUNDING. Agencies have submitted to the Budget Bureau anticipated Y2K spending on their FY1998-FY1999 spending plan forms. Any changes to these estimates should be submitted promptly in writing to both FAD and ITD as they become known.

VENDOR MANAGEMENT. Many agencies would like ITD support for determining whether specific hardware and software products are compliant. In October, the Y2K PMO initiated a formal Y2K Vendor Management Program for various common hardware and software products being used by multiple Com-

Who's Doing What Regarding:

The Year 2000

C O N T I N U E D

monwealth agencies. The program will provide a single point of contact to the vendors to obtain an official statement of compliance for each product. The PMO will make this information available to the agencies through the Y2K web page. Agencies who have already launched their own Vendor Management Program are invited to share their information with the PMO to avoid duplication of effort.

Update on Office of the State Auditor's Year 2000 Survey

The State Auditor's Report on the readiness of state agencies for Year 2000 processing has recently been released. The report, based on a survey of all state agencies initiated last Spring, showed mixed results. While certain agencies have been working diligently to deal with the problem, the survey indicated that many had yet to begin their efforts or were in the very early assessment stages. Auditor A. Joseph DeNucci commended the state's Information Technology Division for its efforts to increase awareness of the Y2K problem through seminars and workshops, serve as a clearing agency for information, and encourage agencies to address the problem. At the same time, the Auditor warned that much more needed to be done at particular agencies with high-risk, mission critical systems. A copy of the report will be made accessible on the Office of the State Auditor's web page at <http://www.magnet.state.ma.us/sao/edpl.htm>, or interested parties may obtain a copy by writing to the Office of the State Auditor at One Ashburton Place, Room 1819, Boston, Massachusetts 02108, Attention: Communication Division.

MITC and Year 2000 Testing

According to a number of Year 2000 experts, testing is probably the most important phase of an organization's Year 2000 project and will account for between 35 and 60% of the project's schedule and resources (staff and equipment). In fact, here in Massachusetts, both the Department of Employment and Training and the Department of Revenue have borne this out with their estimates of 50% of their project's time and dollars estimated for Year 2000 testing.

Testing should be a process that starts early in a Year 2000 project and continues throughout the life of the project. Year 2000 test-

ing is far more complex than typical application development testing since there are so many layers of testing required. The Year 2000 problem affects everything: operating systems, compilers, form generators, report writers, data servers, and vendor-supplied components, such as libraries and toolkits. Testing must include establishment of software baselines, testing that converted software still performs normally using current dates, and testing that converted software performs normally using future 21st century dates. In general, changing a production system's current date for testing is impossible; therefore, for many systems, testing will have to be done in a separate environment. This requires additional space, additional hardware, firmware, and software, and additional time. If any of the hardware, operating systems or compilers, for example, need upgrading for Year 2000, then testing also needs to be very carefully coordinated among all the components. Furthermore, if remediation involves date expansion, more storage space may be required and historical data may also need to be converted. And, all this must be done while continuing to run and maintain the existing system in the production environment.

The ITD Data Center at the Massachusetts Information Technology Center (MITC) in Chelsea is gearing up for Year 2000 testing. The staff in Chelsea is preparing to help agencies with their testing. However, in order for them to best serve their customers, they need as much advance notice as possible and as much information from the agencies as is available. The information that follows will help agencies determine if they will need help from ITD's Data Center and what agencies can do to ensure a successful experience.

WHO CAN BENEFIT FROM THE MITC RESOURCES?

If an agency has mainframe applications and is an existing ITD mainframe customer, then they will need to take advantage of the MITC resources.

WHY WOULD AN AGENCY NEED THE RESOURCES OF MITC?

To test a mainframe application, agencies will need a separate Year 2000 test environment that mimics the production environment. MITC is in the process now of setting one up. MITC has also upgraded current versions of CICS and COBOL, and other

Who's Doing What Regarding:

The Year 2000

C O N T I N U E D

software, to Year 2000 compliant versions. Agencies will need to get the necessary information to convert their own systems.

WHAT CAN AN AGENCY DO NOW TO PREPARE FOR Y2K TESTING AT MITC?

Probably the most important thing an agency can do now to prepare for Y2K testing is to: Find the source code. Without the latest version of source code, agencies will be unable to create Y2K-compliant executable software. If an agency is unable to ensure that their source code matches the current executable code, they will need additional time to recreate their program(s). An agency using back level releases of compilers, operating systems, or other software, especially releases which are no longer supported by MITC, will need to upgrade to a supported release. This will add to the time needed to become Y2K compliant, but it can be done now.

WHEN SHOULD AN AGENCY NOTIFY MITC OF THEIR NEEDS FOR Y2K TESTING?

Agencies will be getting a letter shortly from MITC requesting current and future disk space requirements for their systems, including Y2K initiatives, for the period June 1998 through June 1999. Agencies should return these forms as soon as possible. If an acquisition for additional disk space is needed, a few months lead time is necessary. Any other requests for Y2K testing should be forwarded to MITC as close to February 28, 1998 as possible.

WHAT INFORMATION SHOULD THE AGENCY PROVIDE TO MITC WITH THEIR REQUEST FOR SERVICES?

When an agency makes a request for Y2K testing help, they should include the answer to as many of the following questions as possible:

- What application is being tested?
- What is the system environment?
(e.g., database, VSAM, CICS, COMPLETE)
- Is disk space needed? If so, how much?
- Are tapes needed?
- What languages are being used?
- Are there any data security issues?
- Are there any data storage issues?
- What are the database and operating system requirements?
- What is the schedule for testing?

Providing copies of documented Y2K project plans and/or test plans will also help MITC to better serve their customers.

ITD's Data Center at MITC is preparing for the Year 2000 testing. By April 1998, they expect to have a fully active Year 2000 test environment operational and ready for their customers. ♦

Comptroller Article

Continued from page 1.

Comptroller Kilmartin believes that one of the important aspects of these tasks is the need and ability to exchange information. "Everyone is now toiling in the vineyard of electronic commerce," said Mr. Kilmartin. "Interoperability and data exchange across agencies, programs and jurisdictions will become the driving forces as we move forward." Mr. Kilmartin cited the example of one state agency trying to collect money from an individual while another agency is dispersing funds to the same person. "For instance, the Department of Revenue may be trying to collect back taxes from someone that is scheduled to receive payment as a vendor. With interoperability and data exchange, Agency A would know what Agency B was doing and the back taxes could be deducted before the vendor payment was sent," he said. Mr. Kilmartin said all of these applications come back to the concept of interoperability and data exchange. "Those are the two concepts that are key to the improvement of government services," he said.

Mr. Kilmartin has been Comptroller for Massachusetts since 1989. He has a Bachelor of Arts from Cornell University and a Master of Public Administration from Suffolk University. He is currently serving as the President of the National Association of State Comptrollers (NASC) and Vice-Chair of the Board of Directors of the EBT Council. ♦

IT BOND II UPDATE:

MAGNET Campus Network Upgrade

The Massachusetts Access to Government Network (MAGNet) provides data communications connectivity throughout the Commonwealth. The Campus Network is a subset of MAGNet that today connects government offices at the State House with those at the McCormack and Saltonstall Buildings at very high speeds. The Campus Network Upgrade Project will expand the Campus Network to connect the government offices in the greater Boston area that require high-speed data communication.

The more than 80 new applications funded in IT Bond 2 will improve service delivery and increase operating efficiency for many Commonwealth Agencies. State-of-the-art information technologies and flexible workflow patterns will enable these improvements. The new applications all require much higher data communication speeds, increased connectivity to network services, flexibility to adapt network design to changing workflows, and service availability at the same level as telephone voice service. The Campus Network Upgrade is designed to meet these application requirements.

The Campus Network Upgrade begins with upgrades in the building wiring. Optical fiber is used for vertical runs from the building basements to wiring closets on each floor. Category 5 copper wire completes the horizontal run from the wiring closet to a data communication hub on the local area network (LAN) for the building floor. Patch panels in the wiring closets provide flexible connectivity and redundant paths to eliminate single points of failure. Battery back-up electrical power is provided, along with cooling and security controls, and on-line documentation is completed for rapid troubleshooting of problems. Buildings are then interconnected either with optical fiber or commercial network transport services, depending on the distance from the Network Technical Assistance Center (NTAC). The NTAC is located in a secure government building within the Campus Network. The NTAC also contains gateways to the Internet, the wide area network, the security firewall and other centralized data communication services.

Bay Networks, Inc. (<http://www.baynetworks.com>) was selected as the ITD Communication Services Bureau's technology partner to upgrade the campus network. Bay Networks will provide the required selection of equipment and services at the most competitive price to achieve the project requirements. Bay Networks is also providing extensive services for start-up and first year operation. Data communication switches manufactured by Bay Networks are installed on strategic floors in the wiring closets. The data transport protocol on the Campus Network backbone is converted from

Ethernet to Asynchronous Transfer Mode (ATM) to allow much higher communication speeds. The ATM protocol allows switching of data messages on the Campus Network to replace routing. The performance of client/server applications usually improves when switching replaces routing.

The standard today in the Commonwealth for desktop connectivity to LANs is 10 Mbps Ethernet. High-volume LAN servers connect to the campus network at 100 Mbps. The Campus Network is now operating at 155 Mbps. The speed is scalable to 622 Mbps when required by the volume of data communication traffic. The ATM protocol also operates over much longer distances than is possible with Ethernet. With the ATM protocol, the span of the Campus Network can be increased from the few kilometers around the State House to other buildings in the Boston area occupied by State Agencies.

The Project concludes with an upgrade of the network management environment. Network management includes installation of new and improved software to continuously monitor network service availability, provide utilization information for capacity planning, proactively troubleshoot problems with network objects, and improve operating efficiency. Network management staff are trained, new network management techniques are introduced, and relationships with key vendor partners are strengthened.

The Campus Network wiring infrastructure in the McCormack Building and the State House was upgraded in June 1997, and the prototype Agencies were converted to the ATM Campus Network backbone during September 1997. The remainder of the Agency LANs in the McCormack Building and State House are being converted to the ATM Campus Network backbone during Q2 FY 1998. The network management environment is being upgraded in parallel, with some project schedules extending into summer 1998.

Planning is in progress to connect agencies in the Hurley Building, 600 Washington Street, and the Transportation Building to the expanded Campus Network during 1998. New ATM switching technology will enable connecting Chelsea's MITC to the Campus Network backbone during FY98.

For more information contact Lou Macinanti, Communication Services Bureau Director, at 617-937-0962. ♦

FISHERIES & WILDLIFE

Permitting to go On-Line

Massachusetts is blessed with many wonderful natural resources and provides a vast number of opportunities for those who enjoy hunting and fishing. Unfortunately, obtaining the necessary licenses and permits to enjoy these endeavors can sometimes be a time consuming process. Currently, different types of sport and recreational licenses are issued at different locations. For example, if someone has a boat for fishing, they may need to go to Boston to register their boat and then to a retail outlet or town hall for their fishing license. That scenario is about to change thanks to a system that is being implemented by the Office of the Commissioner of the Massachusetts Department of Fisheries, Wildlife & Environmental Law Enforcement (DFWELE).

DFWELE has solicited bids to help create a Statewide Point-of-Sale Outdoor Recreation Transaction (SPORT) system that will provide one-stop shopping for licenses from a variety of locations including home computers. Other key objectives sought through SPORT include consolidation of the licensing process across the three divisions within DFWELE, increasing revenues by making licensing simpler and more convenient for the consumer, and improving auditable processes.

The DFWELE reports to the Secretary of the Massachusetts Executive Office of Environmental Affairs (EOEA). The stated purpose of DFWELE is to manage fish and wildlife, manage activities of the constituents, manage the use and harvest of the Commonwealth's natural resources and property, and ensure that these resources are available to the public forever. The three divisions within DFWELE are the Division of Fish and Wildlife

(DFW), the Division of Marine Fisheries (DMF), and the Division of Environmental Law Enforcement (DLE).

Together, each of the divisions regulate and protect the Commonwealth's Fish and Wildlife resources. DFW is responsible for issuing fishing, hunting and trapping licenses and permits. This is currently a manual process that involves division staff in Boston, approximately 150 qualified licensing agents (from mom & pop type bait stores to major national chains such as Walmart) and approximately 350 city and town clerks). DMF is responsible for licenses and permits for commercial and recreational saltwater fishing and lobstering, and related activities such as the sale of seafood. DLE is mainly responsible for registration and titles of motorboats and registration only of all terrain vehicles (ATVs) and snowmobiles. In addition, the Environmental Police, which are part of DLE, are responsible for enforcing natural resource and environmental laws. DLE has five locations across the state that handle all registration and licensing activities.

Across the DFWELE divisions, levels of automation range from virtually nothing to Oracle databases. Because each of the divisions has their own licensing system there is redundant data, inconsistent business and accounting processes, difficulty in sharing information and inconvenience to many of DFWELE's customers who do business with all three divisions. SPORT Project Director Charlie Anderson said that the new system will help eliminate these problems. "Accounting and record keeping will be electronic and access to the permitting process will be much easier," he said.

The solicitation was closed in October and it is expected that implementation should begin sometime in 1998.

Microsoft Select Agreement

Commonwealth agencies are reminded to always use the Statewide Contract N69220300 to purchase all Microsoft products. Extensive discounts have been negotiated on behalf of the Commonwealth. The key to acquiring these discounts is volume. All Commonwealth agencies must use the Statewide Contract if this contract is to be beneficial. You can review the terms and conditions of the contract as well as ordering procedures at <http://www.magnet.state.ma.us/osd/memo/updt9717.pdf> or by calling OSD at 617-727-7500. ♦

IT Briefs

Massachusetts Information Turnpike Initiative

The Massachusetts Information Turnpike Initiative (MITI) is a state-wide high-capacity fiber optic backbone network which runs 125 miles from Boston to Westfield along the median strip of the Massachusetts Turnpike. MITI is financed by IT Bond 2 funds and is being developed by University Information Systems, a department of the University of Massachusetts System and the UMass President's Office.

MITI began construction in April 1997 and it is now operational. Core components of this advanced high capacity digital network were put in place by the end of August, and UMass began its fall 1997 semester by broadcasting courses through the five campus system with interactive digital video. Through the remaining academic year, UMass is working to increase its video based course offerings, integrate its state-wide Internet service used by state and community colleges, and to begin initiatives with the Department of Education for support of its K-12 network needs. New initiatives include exploring uses of MITI with the National Guard and State Police for their education and training needs.

The major technology enabler is a dual SONET OC-48 carrier service (Northern Telecom BLSR OC-48 equipment) using four single-mode fiber optic cables and providing an initial capacity of 2.4 gigabits per second. Communications shelters constructed by the MassPike house the equipment where fiber segments are terminated. An ATM (Asynchronous Transfer Mode) switch provides a versatile digital service needed to "channelize" the OC-48 bandwidth into specific data, voice and video channels or virtual circuits (Fore Systems Inc. ASX 100 ATM enterprise equipment). Bell Atlantic/NYNEX linked each campus with a high-speed DS-3 link, equivalent to 28 T-1 lines for a total of 45 megabits per second. These lines link the campuses to the MITI backbone and terminate on each campus with smaller-scale ATM edge switches (Fore Systems Inc. equipment).

In August, MPEG-2 digital video codecs (Northern Telecom MPEG-2 equipment) were installed at central locations on each campus. This provided the capability to send and receive highest-quality digital video for UMass courses, compressing the 45 megabit per second signals to a user-selectable range of 6-12 mbps.

This compression is required to link to commercial video broadcast systems as well as to reduce the overall bandwidth required to pass through the 45 mbps DS-3 links to the campuses.

For more information, see the MITI web site at <http://www.umassp.edu/miti/miti.html> or call Peter Carino, MITI Director, at 413-587-2121.

Communications Bridge

The Communications Bridge provides a mechanism for applications to communicate with other applications in a consistent, standardized manner. It enables real time queries and updates as well as data streaming. Backup and recovery, store and forward, security, auditing, and protocol conversion are also provided.

Valuable data is stored in many different computer systems which are often on different physical machines, are separated geographically, require very different rules to be accessed, and do not use the same computer "languages" (protocols, communications software, etc.). Because of these disparities, the data is difficult to share among computer systems. This means that many business systems cannot access all the data they really need in order to make the best decisions, provide the best service to clients, reduce fraud, and enable management analysis activities. Often, the data that can be shared is not as timely as the needs of the business would dictate, requires significant human intervention and cost to deliver, and may depend on delivery technologies that are not reliable.

CommBridge uses IBM's MQSeries software, the industry's leading message queuing product, as its foundation. Each platform containing an agency information system application server is tied into CommBridge via a copy of an MQSeries product, which consists of a local queue manager and one or more message queues.

MQSeries provides a powerful and flexible asynchronous message-passing capability, with an intuitive, compact Application Programming Interface (API). It allows disparate applications to be connected transparently across heterogeneous network protocols, hardware and software platforms. MAGNet, the Commonwealth's wide area network, provides the communica-

IT Briefs

tions path to link systems together. CommBridge is based on several important concepts:

- Departments agree to provide a "service" (example: CTR's MMARS Load service) to those departments authorized to "request" it.
- Each department's computer system can remain autonomous and no control is given up.
- Service and requester software components are to be reused whenever possible, resulting in great efficiencies once the core set of components are built and ready to be reused.

For more information, contact Mark Heumann at (617) 973-0701 or at Mark.Heumann@state.ma.us

Ed Tech Update

On August 27, 1997 Governor Paul Cellucci announced the award of \$7.75 million in education technology matching grants to 135 local school districts. In an historic first, the Governor sent notification of the grants to district superintendents via e-mail after showing reporters his prowess with a web browser. Governor Cellucci is the first chief executive in Massachusetts history to have a computer in his office, and he also uses a notebook computer while at home or when traveling.

As a result of this announcement, all 340 of the state's 347 school districts that submitted local technology plans to the Department of Education have received their education technology matching grants. Since last October, the state has distributed \$27.5 million in such grants, with the five largest going to Boston (\$1,898,790), Springfield (\$707,520), Worcester (\$702,570), Lowell (\$458,940), and Brockton (\$451,050). These grants were authorized by the Education Technology Bond Bill, which was a part of the larger Information Technology Bond Bill II. The Ed Tech Bond Bill authorized \$30 million for \$30 per student matching grants to school districts that have a local technology plan approved by the Department of Education. To be eligible, districts must match the state money 3:1.

"Leveling the Playing Field" - Comm-PASS Public Access Sites

Through its Procurement Reform initiative, Massachusetts looked to develop policies that would support the Commonwealth's socio-economic goals, while streamlining and improving the procurement process itself. This resulted in the development of Comm-PASS (Commonwealth Procurement Access and Solicitation System), an on-line database that contains over \$4 billion in solicitations for goods and services. This Internet-based, electronic tool supports all aspects of the reform and offers a number of opportunities for broadening the participation base and for fostering relationships between all sizes of business.

One of the primary concerns involved in moving to an on-line solicitation system, was the question of providing equity in access or "a level playing field" to less sophisticated or Internet-savvy businesses. Indeed, interested individuals would need a personal computer, modem and connectivity to the Internet to access Comm-PASS. What about those vendors who didn't have the requisite technology or connectivity?

An effective solution was the establishment of a network of Comm-PASS Public Access Sites. Currently there are over 35 Public Access Sites located statewide in Community and Business Development Centers, Chambers of Commerce, Community and State Colleges, Local Businesses and Libraries. These Public Access Sites are conveniently located so that anyone can have access to a computer, the Internet and the Comm-PASS web site (<http://www.comm-pass.com>). Not only do Comm-PASS Public Access Sites provide this service to the public - free of charge - they also have staff who are available to answer any questions or give needed assistance.

The identification and set-up of Comm-PASS Public Access Sites is on-going. Dedicated to improving statewide access, Pamela James-Sommer, Director of Training & Outreach says, "We are continually looking for new Public Access Site locations and are pleased with the positive reception and number of inquiries we have received from various businesses and community organizations." Anyone wanting more information regarding either Comm-PASS or the Public Access Sites can contact the Comm-PASS Help Desk toll-free number: 1(888)MA-STATE or send an email to: <comm-pass@state.ma.us>. ♦

INFORMATION TECHNOLOGY DIVISION

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The *Information Technology Bulletin* is a quarterly newsletter of ITD's Strategic Planning Group. One of SPG's tasks is to act as a clearinghouse for IT information. This publication furthers that goal. Please send correspondence to Managing Editor, Elaine Socha, the Information Technology Bulletin, Room 801, One Ashburton Place, Boston, MA 02108.

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This publication is also available on the Web at
<http://www.magnet.state.ma.us/itd/bulletin/>

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A MESSAGE FROM THE CIO

This quarter's message is really from the Secretary of Administration and Finance, Charles D. Baker, whose Year 2000 Compliance memo of September 29, 1997 to all Secretaries and Department Heads is replicated on page 4 of this issue of the Information Technology Bulletin.

The memo is clear, and will not be benefited by further embellishments on my part, so I will only urge that you read and circulate it.

ITD will continue to provide assistance to state government organizations in meeting this challenge. Many examples of the assistance offered are described on pages 5 through 7 of this issue and on our Y2K web site at <http://www.magnet.state.ma.us/y2k>.

Sincerely,
T. Louis Gutierrez

INFORMATION TECHNOLOGY

B U L L E T I N

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Summer 1997

Chief Justice Sets IT Goal for Trial Court



Chief Justice John J. Irwin, Jr. became Chief Justice for Administration and Management of the Massachusetts Trial Court in 1994. In this capacity, Chief

Justice Irwin, among his many broad responsibilities, oversees information technology and has set a goal to fully automate the Trial Court and the rest of the Judicial Branch. The Chief Justice said that he sees the day in the not too distant future when the Trial Court receives case filings electronically from criminal justice agencies and from private attorneys, moves cases through court with minimal paper handling and, upon adjudication of cases, notifies all concerned parties electronically.

"Our IT plans will enable us to exchange information electronically with the Department of Correction and the Sheriffs, and to receive not only an electronic case filing from a police department but also fingerprints and digitized photographs of prisoners. This will help minimize the possibility of incorrect identification of a defendant and decrease the risks for everyone dealing with the individual," said

Chief Justice Irwin. "I also expect that we will see the day in the next year or two when we begin to produce electronic transcripts of proceedings, making information available much more quickly to parties to the case. This same facility will expedite assembling the record for appeals, an important step in reducing the time to bring cases to real closure when they involve serious offenses such as first degree murder."

By using information technology to comprehensively address the needs of the entire Trial Court system, the Chief Justice envisions an increase in the availability and consistency of information, which will increase accountability within the Trial court. This comprehensive approach will also make information accessible to the bar, the public and other "justice enterprise" entities, improve the integrity of records, and bolster public confidence in the Trial Court's ability to deliver justice.

To date, the Trial Court has significantly upgraded its central computing capacity by replacing the mainframe computer that supports systems used by probation departments throughout the state and the jury selection system operated by the Jury Commissioner. Additional accomplishments included:

- "Opened up" the mainframe with a replacement system that includes an NT "personality";
- Added software that will enable the Trial Courts to interconnect the Warrant Management System (WMS) with Probation systems;
- Added capacity to the central server that supports WMS;
- Delivered notebook computers to almost 200 judges who had limited access to computers prior to this distribution;
- Developed an infrastructure architecture that will guide the network and platform advances over the next several years; and

Chief Justice Sets IT Goal

Continued on page 2

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FY 97 Big Buy Garnerers Great Discounts

For the past three years the Office of the State Comptroller, together with the Budget Bureau, the Information Technology and Operational Services Divisions of the Executive Office for Administration and Finance, have coordinated an Information Technology "Big Buy" for Commonwealth departments. The Big Buy is a centralized effort which pools together information technology equipment orders across state departments in order to obtain volume discounts from vendors.

For FY97, the equipment available through this initiative included Commonwealth standard configuration PC workstations from three manufacturers, minimum and standard configuration notebook computers, printers and servers. A Request for Quotes issued to vendors on the Commonwealth's Information Technology statewide contract resulted in prices which represent savings in the range of \$600 to \$800 per system from mail order (for example, DELL on-line and PC Mall) and/or retail prices (for example, Lechmere and CompUSA). The Big Buy prices also represent an average \$600 savings per unit over regular Commonwealth statewide contract prices. As an example of Big Buy prices, PC workstations which are Pentium full multi-media systems including the latest 32-bit operating systems and 17 inch monitors, are all under \$2,000.

According to the vendors involved, this year's Big Buy is the largest volume pricing/purchase initiative undertaken to date in either the private or public sector. Final orders were received from 49 departments for a total of 1,450 PCs, 203 Notebooks, 131 Printers and 8 Servers. These orders add up to a total of

\$6.5 million which represents more than \$2 million in savings over regular Commonwealth blanket contract prices. In addition, the special pricing has been extended to municipal and county government as well as to state employees.

This year's initiative included the following innovations:

- Recommendations from the technical and user communities were incorporated for requirements and manufacturer preference.
- Requirements were included for original manufacturer components.
- Manufacturers were negotiated with directly, in addition to getting "best and final" quotes from resellers.
- Equipment was tested extensively by ITD employees to assess compatibility with Commonwealth enterprise applications and network operating systems.
- All workstations and notebooks available for purchase were on display at the Information Technology Division for viewing and evaluation by departments and employees.
- Big Buy prices for selected systems (now also including Dell) were extended beyond June 30 for continued purchasing into FY98.
- The Big Buy was publicized widely through the World Wide Web (Internet) and mass mailings to cities, towns and counties.

For more information about ordering in FY98 at Big Buy prices, see the Big Buy web site at <http://www.magnet.state.ma.us/itd/bigbuy/>. ♦

Chief Justice Sets IT Goal Continued from page 1.

- Began pilot implementations of the infrastructure design by establishing NT-based LANs at several court locations and continued in the efforts to reach the long-term goal of providing a desktop computer wherever one fills a productive role.

"We have already invested a great deal of work in developing an information technology plan to achieve our goal of full automation of the Trial Court. We expect the pace of our efforts to pick up as we bring in a systems integrator to work

under the direction of the IT Department," the Chief Justice said. "I count myself lucky to be able to rely on two key people — Lynne Reed, the Executive Director of the Administrative Office, and Rich Duggan, the Director of IT for the Trial Court — to keep this project moving forward successfully. Lynne and Rich will continue to lead and direct this effort, following the path that I set with their advice. In addition, I am fortunate to have the benefit of the counsel of the Supreme Judicial Court and a 27-person Information Technology Advisory Committee which I named last fall." ♦

Department of Education Chief Information Technology Officer Sees Profound Change Ahead



Greg Nadeau is currently serving as Chief Information Technology Officer for the Massachusetts Department of Education. In this capacity, he oversees:

- the Department's internal technology systems, including DOE LAN, WAN, PCs and peripherals, help desk, and technology training center;
- the development of a comprehensive information management system (DOE IMS) which will automate and decentralize the K-12 data collection and reporting process and establish a foundation for the accountability systems called for in the Education Reform Act of 1993;
- implementation of the Massachusetts Universal Access Plan which will provide all educators with toll-free, dial-up Internet accounts and high speed dedicated links from schools to the Internet; and
- statewide coordination of instructional technology initiatives, including the local technology plan approval process, Lighthouse Technology Sites,

the Federal Challenge Grants, and the Technology Training and Professional Development (TTPD) system.

Prior to overseeing the Department's technology initiatives, Mr. Nadeau directed the Department's strategic planning efforts and authored the Education Reform Implementation Plan, First Annual Implementation Report and the Goals 2000 Five Year Master Plan. Mr. Nadeau said that as the Department's CITO, one of his roles is to help shape the changes that information technology will bring to public education in Massachusetts. "Public education has remained basically the same for over 100 years," he said. "Now the information age is creating profound change."

Mr. Nadeau stated that the Education Reform Act of 1993 provided a regulatory framework for change with the goal of improving student performance. Information technology can help reach that goal by improving the institutional infrastructure, enhancing educators' professionalism, and increasing administrative efficiency and accountability. Efficiency can clearly be improved through enhanced information management systems and Mr. Nadeau said this will help create an environment that is data rather than anecdote driven. For example, he pointed out that with an enhanced data system, if the Department wanted to find out how a specific segment of the stu-

dent population was performing in certain subject areas, that will be possible.

While other improvements such as providing basic functions such as e-mail to educators will occur, Mr. Nadeau said that it is important to keep an eye on the bottom line as technical upgrades are implemented. "Schools will soon be moving from soliciting surplus equipment to being serious information technology planners," he said. "This is creating a whole new market and before the market gets out of hand we need to control costs."

Mr. Nadeau said that he and his department have spent a considerable amount of time working on procurement reform. The Department recently created a vendor pool for information technology goods and services in the education sector. In establishing the pool, the Department set out conditions which require vendors to disclose their cost of delivery and cap their profits at 25%. Typically, vendor profits can range from 100 to 300%. "If an agency can create a new market, it is unreasonable to pay a markup over 100%," he said. The CITO said he has found vendors willing to accept a 25% profit margin. "Paying top dollar does not provide a quality guarantee — no matter what you pay, it's still a crap shoot," he said. ♦

On-Line Task Force Formed, Issues RFI

In March, Chief Information Officer T. Louis Gutierrez established the On-Line Government Task Force to chart the immediate future course of on-line government in the Commonwealth of Massachusetts. The Task Force consists of representatives from a number of different agencies, departments and offices of the Commonwealth. The Task Force is investigating solutions that improve efficiency and service quality using internal and Internet-based electronic communications that possess authentication (to achieve access control as well as non-repudiation), integrity, and confidentiality. The Task Force has been instructed to report to the CIO on:

- a) the Commonwealth's operational needs for on-line government functions;
- b) the legal and policy requirements for such functions, with particular emphasis on the need for authentication, integrity, confidentiality, and non-repudiability;
- c) currently available and near-term technologies performing such functions;
- d) central services that could promote the growth of on-line government;
- e) the state of current technical and legal efforts in the Commonwealth, other states, the federal government, and other countries;
- f) specific technical and legal information that could support agencies that are implementing or evaluating on-line government functions;
- g) suitable candidates for pilot projects for evaluating on-line government solutions.

The Commonwealth has made information technology (IT) development and electronic communications a priority, spending approximately \$350 million on IT annually. The Commonwealth seeks to make a large number of routine business transactions available over the Internet and internal networks, with the intent that they will be performed for less cost and conducted at a higher quality service level for citizens, regulated entities, vendors and others. The Commonwealth seeks to create methods for secure access to a number of business transactions via electronic media, including licensing, permitting, applications, filings, procurement and a host of other func-

tions. Internally, the Intranet is being looked at as a potential mechanism to alleviate the crush of paper associated with a large number of routine state government functions, including personnel, procurement drafting, and other collaborative data sharing, work flow or messaging applications.

To help fulfill these goals, the Task Force has issued a request for information (RFI). The Task Force is contemplating the release of one or more procurements by the Commonwealth for electronic commerce products and/or services and the RFI was intended to solicit information that could be useful in drafting subsequent RFRs. This RFI specifically seeks information on products and/or services that will enable the Commonwealth of Massachusetts to use the Internet and internal networks for secure messaging and transactions. For example, the Task Force is seeking responses from vendors which offer information about currently-available solutions to any or all of the following business needs:

- Internet access with authentication. Such an application would involve access via the Internet to Commonwealth data located behind the firewall.
- Internet-based data submission with non-persistent connection. Such an application would involve access via the Internet to a Commonwealth database behind the firewall for the purpose of submitting information.
- Internet-based data exchange with persistent connection. Such an application would involve access via the Internet to an on-line application located behind the firewall such that the user would be authenticated once, and the system would maintain the identity of the user in all portions of the application throughout the duration of the session.

Responses to the RFI were received by the Task Force in May and are being reviewed. Anyone interested in receiving more information on the RFI or joining the task force should contact Task Force Leader Dan Greenwood at dgreenwood@state.ma.us or 617.973.0071. ♦

DA's Seminar Focuses on Automatic Case Tracking

Continuing the process of creating an automated case tracking data base, the Massachusetts District Attorneys Association conducted a project seminar in May. The seminar was the culmination of almost a dozen meetings that were held between January and April regarding the data base development project. The project is a re-engineering effort that will look at the procedures within the district attorney offices, along with the existing case tracking system, in order to develop a comprehensive tracking system.

The purpose of the two day seminar was to:

- give participants an overview of the information technology departments for the criminal justice and human service agencies that interact with the district attorney offices;
- demonstrate applications that address specific requirements of the district attorney offices and use certain technical concepts;
- review the work that has been done to date; and
- review the next phase of the project and the role of functional groups in the remainder of the project.

Prior to the seminar, the district attorney offices were divided into functional areas and representatives were sought from each group and pre-seminar meetings were held. Information Technology staff acted as facilitators at each of the meetings. In addition, a number of subcommittees were formed to provide input on the design of the data base: these include a District Attorney Advisory Subcommittee (made up of ten subgroups ranging from District Court ADAs to support staff to CPAC investigators), a Technical Facilitators Subgroup and a Financial Advisory Committee.

During the seminar's first day, representatives from outside agencies that deal with the district attorney offices were invited to discuss their information technology goals and explore how the different groups can improve interaction. The speakers represented a wide array of agencies ranging from human services to law enforcement and corrections. On the second day, members of the subgroups met to review a consolidation chart that had been developed during the pre-seminar meetings. Functional diagrams were produced from the various subgroups and these were consolidated into a chart that encompasses the whole system. At the seminar the chart was reviewed for completeness and accuracy, as were the data elements and their sources.

"The seminar was designed to be informational. We wanted our people to start focusing on where information was coming from."

Peggy Sullivan, from the Massachusetts District Attorneys Association, said the seminar was very useful in moving the data base development project forward. "The seminar was designed to be informational. We wanted our people to start focusing on where information was coming from," she said. Ms. Sullivan said the district attorneys are looking to put themselves in a position to share information with outside agencies and the seminar "helped to get our people thinking the same way."

With the seminar successfully completed, a new round of meetings will be held to begin focusing on specific actions to be taken. ♦

Who's Doing What Regarding.

Y2K Program Management Office Established

Under the direction of CIO Louis Gutierrez, the Strategic Planning Group of the Information Technology Division (ITD), has established a Year 2000 (Y2K) Program Management Office (PMO). The Y2K PMO's mission to support agencies in this effort is three-fold: to support the CIO's need to understand, monitor, and report the status of Agency progress in meeting the Year 2000 challenge; to support Agency efforts in meeting the challenge; and to ensure the continuity of state services into the next millennium.

"We cannot afford to take the Y2K problem lightly since its impact could affect all state operations," notes Val Asbedian, Director of the Strategic Planning Group. "I am confident that by establishing the PMO, we now have in place the talent and resources with which to coordinate the various on-going activities and provide advice and counsel where it may be needed."

ITD has contracted with Science Applications International Corporation (SAIC) to provide project management and staffing support for the Y2K PMO. Led by Daylia Vaughan from SAIC, the PMO staff includes both state and contractor personnel.

The group is building on the activities begun by the Strategic Planning Group to ensure continuing awareness of Year 2000 issues, best practices, and lessons learned. Essential next steps are to determine the size of the Year 2000 challenge at the statewide level, to establish a mechanism for tracking and reporting status of meeting the challenge, and to provide coordination and services to support the efforts of the individual agencies.

Update on the State Auditor's Year 2000 Survey

During April 1997, the Office of the State Auditor (OSA) mailed surveys to 637 state agencies, including those within the Executive, Judicial and Legislative Branches, as well as constitutional offices and independent authorities. The survey is intended to provide a means to assess levels of awareness and plans for confronting the Y2K challenge and to identify where assistance may be required.

It is somewhat disquieting to note that, although surveys were to be returned by mid-May, fewer than 300 surveys had been received by the OSA. As a result of follow-up calls made to agencies, additional surveys have been received. Furthermore, on-site interviews have been conducted with selected agencies to ob-

tain a more in-depth understanding of levels of awareness and preparedness for date processing after the turn of the century.

Once a sufficient number of surveys have been received and analyses performed, the OSA plans to provide agencies and other interested parties with a summary report and conclusions. In addition, the OSA, in conjunction with ITD, is planning to conduct periodic surveys throughout the remainder of this century.

ITD's Strategic Planning Group Creates Y2K Library

The Information Technology Division's Strategic Planning Group (SPG) has assembled a library of material about the Year 2000. The library contains material in these Y2K categories: non-governmental articles about the Year 2000 topic in general; RFPs and compliance agreements; audit guidelines; warranties; questions; checklists; conferences; standards; contracts and legal issues; surveys; web sites; PCs; project planning; federal and state government articles; software vendor letters; and vendor company information. The library is constantly being updated. To use ITD's library, contact Y2K coordinator Marcia King at 617-973-0711 or at Marcia.King@state.ma.us. ♦

The Year 2000

IT Statewide Contracts & the Year 2000

In order to ensure that all products and services purchased on IT statewide contracts are Year 2000 compliant, OSD is requiring a Year 2000 amendment on all of these contracts at renewal time. Until that time OSD has requested that all vendors voluntarily offer an additional Year 2000 warranty on the following contracts:

- PC Network and Integrators Contract, 6/30/98 renewal.
- IT Consulting Contract, 6/30/98 renewal.
- Mid-Range Contract, 8/20/97 renewal.

All vendors that have executed a Year 2000 warranty acceptable to the Commonwealth are listed in OSD Update 98-3. This memo and its updates as they occur are available at: <http://www.magnet.state.ma.us/osd/memo/memotoc.htm>. OSD is also incorporating a Year 2000 warranty in all new statewide contracts after March 1997. The new PBX and Oracle contracts ITT01, ITT02 and ITM01 have these compliance provisions.

OSD recommends for new IT purchases of products and/or services that the above list is checked to determine if the Con-

tractor has signed an acceptable Year 2000 warranty. A copy of this signed statement is available from the vendor. If a vendor is not on the list, they should be asked to sign a Year 2000 warranty before committing to any new work. A sample warranty statement is included with the OSD Update.

Every IT project should be evaluated for the risk of loss due to Year 2000 Issues. If the risk is high for mission critical or date sensitive applications, then the project team may want to seek additional protections such as:

- Requiring additional tests to prove Year 2000 compliance before acceptance.
- A guarantee such as proof of insurance, penalties, or performance bonds.

Agencies needing help addressing these issues or with related questions can call OSD at 617-727-7500.

ITD Y2K Awareness Days

The next Y2K Awareness Day will take place on October 9, 1997 on the 21st floor at One Ashburton Place in Boston. At this event, copies of an updated version of ITD's booklet, Year 2000 - Meeting the Challenge, first published in April 1997, will be available. The October event will feature: SAIC with an update on the Program Management Office;

Cambridge Resources on popular misconceptions of the Y2K process; NYNEX on PBXs; Digital on assessment through implementation; and EDS on Y2K testing.

The previous Y2K Awareness Day occurred on June 12, 1997 and focused on desktop software vendors Microsoft and Oracle and telecom vendors NYNEX and Lucent. ITD kicked the event off by introducing their new contractor SAIC/Synetics who spoke on their role of assisting in statewide coordination of Y2K remediation (see initial Y2K item).

Farhed Khouzani, Microsoft system engineer, described which of their products will be Y2K compliant when and highlighted their Web site (see below) for such information about all of Microsoft's products. Jim Thorpe of Oracle's Government Group, Pete Pacchiana, staff director of NYNEX's Millennium 2000 program office, and Edward Dill, Lucent's program manager for Y2K, described their organizations' work on preparing for the Year 2000.

Note: See [Resources](#) (near the end of this Bulletin) for Year 2000 Web Sites ♦

County Government Update

This is part of a continuing series of articles on the technical needs posed by the inclusion of county government functions into state agencies.

FRANKLIN COUNTY SHERIFF'S DEPARTMENT

On July 1, 1997 the Franklin County Sheriff's Department became part of the Executive Office of Public Safety. This necessitated the purchase of new computer equipment to comply with MMARS and PMIS. With this consolidation and purchase of new equipment, Franklin County Sheriff's Dept. Director of Personnel Affairs Jeff Wallace said the Department's information technology capabilities went "from the stone age to the 21st century."

With new equipment purchased through the Commonwealth's "Big Buy", the Department's capabilities improved from surplus computers donated from local elementary schools to 25 new workstations with the latest software that will be networked together and will provide direct access to the Commonwealth's systems. Mr. Wallace said that their work stations have all been installed and their network will be completed soon. This will satisfy their goals of having the entire office fully integrated and of providing access to departmental employees. An important part of that access will be the links to MMARS and PMIS because the former county employees now work for the Commonwealth.

But Mr. Wallace sees more than an electronic link to the Commonwealth's computer system. He also sees a method for increasing efficiency and productivity in the Franklin County Sheriff's Department. In addition to providing Internet and internal e-mail capabilities, a full range of law enforcement information will be available. For example, the depart-

ment now has the ability to cross reference criminal records and obtain information on tracking deadbeat spouses.

To procure the equipment, Mr. Wallace said the assistance of Bob McInnis from the Information Technology Division and David Kennedy, Budget Director for the Executive Office of Public Safety, was essential in moving things forward. He noted that Mr. Kennedy convinced the County Government Finance Review Board to provide partial funding for the project and Mr. McInnis pulled all of the outside vendors together to make the system work.

Now that the system is being installed, training sessions will occur through the use of a mobile training van that will come to the Franklin County Sheriff's offices in Greenfield. Computer and network training will be held for the Sheriff's management, professional and clerical staff. Eventually, the Department plans to be fully integrated -- including the jail facilities -- once various security issues have been worked out. For now, it is anticipated that the network will be up and running in early September.

MIDDLESEX, HAMPDEN & WORCESTER COUNTIES

Middlesex, Hampden and Worcester Counties were also absorbed by the state on July 1, 1997.

Unlike Franklin County, Middlesex County already had in place an infrastructure to support MMARS and PMIS. So their plan involved connecting their network to the state's wide area network for e-mail and Internet access. The execution of this plan should be completed in September.

Hampden and Worcester Counties will begin their technology conversions in the fall. ♦

IT BOND 2 UPDATE:

Better Government Projects

This is part of a continuing series of stories on the IT Bond II package. The Public Safety projects were described in the Summer '96 issue, and the Education projects were described in the Fall '96 issue (where all IT II projects were listed). Here are descriptions of some Better Government projects, more of which will be described in future issues.

MAGNet

This ITD project will create a Commonwealth-wide information directory, cataloguing business processes and data elements. It will create the framework within which common data elements can be standardized, to facilitate exchange and/or reduce redundancy. It will identify areas where cooperative information collection and maintenance can benefit the Commonwealth. The project will focus on common business practices and information, and will develop common message formats and protocols for real-time information exchange among statewide information users. This project would determine the feasibility of establishing a statewide information hub through which information exchange can be brokered.

BEACON

The BEACON project is necessary to improve and automate key business functions. The current system remains at its core a 25 year old recipient payment system. The BEACON project will improve the accuracy and efficiency of the Department of Transitional Assistance's operations through reduced error rates, enhanced productivity, expanded availability of management information, enhanced interfaces with other state and federal agencies, and improved data integrity.

Electronic Commerce

The initiative of the Office of the State Comptroller will create the means to exchange information and payments with business, departments, and persons electronically instead of on paper. The paperwork – and all the labor to keep track of it – will be eliminated through computer automation. Paper checks will be replaced with electronic funds transfer (EFT) and electronic benefits transfer (EBT); purchase orders and contracts will be executed with electronic data interchange (EDI); remittance information will change from paper check

stubs to electronically invoked audio response units (ARU); and contracts and other information will be communicated and managed between the Commonwealth and private sector businesses via the Internet and the World Wide Web. Implementing electronic commerce statewide will improve the quality of service and decrease administrative costs while providing a visible demonstration of business process reengineering.

Automated Audit Preparation & Office Automation

The Office of the State Auditor's project will enhance the Commonwealth's efforts to make government more efficient and accountable. Reengineering and fully automating the process of auditing are aimed at increased agency compliance with statutory mandates and implementation of sound business practices and effective systems of internal control. The conversion of the Auditor's Office to networked PCs, notebook computers, and office automation software that are compliant with the Commonwealth's standards will greatly improve productivity. The new capabilities for use of templates for reports and workpapers, improved file transfer and document sharing, on-line review and editing, computer access to auditee data, computer analysis of data, and the on-line availability of reference materials, will all result in more comprehensive and effective audits.

Integrated Licensing and Document Management Systems

This project will utilize information technology to streamline and consolidate the tracking, licensing, and document management systems for the Office of Consumer Affairs and Business Regulation. Businesses and consumers will then be able to get the services and information they need 24 hours a day, 7 days a week by picking up their telephones or logging into the Internet. This effort will reduce license processing time by 30% and eliminate current duplicative document management tasks. Additionally, it will provide for more efficient complaint tracking, investigative and enforcement activities by providing automated access to other state databases, and will form a blueprint for licensing systems throughout the state. ♦

DOR's Tax Systems Win Computerworld Smithsonian Award

Massachusetts Department of Revenue's revolutionary tax processing systems have won the 1997 Computerworld Smithsonian Award. Each year, the Computerworld Smithsonian Awards honor those who have used information technology to improve society. DOR is one of 12 organizations that received awards from a field of 321 entries. DOR won the award in the category of Government and Non-Profit Organizations for their Telefile and Imaging systems. The materials DOR submitted for the award will become part of the Smithsonian's permanent collection on the Information Age, one of the most important of its kind in the world. The collection serves a critical historical purpose by helping the Smithsonian Institution record the information technology revolution and the impact it has on our lives.

"This crowning achievement is the result of a tremendous amount of hard work by many at the Massachusetts Department of Revenue. DOR's vision, put together with expertise from the world of information technology, produced a winning combination. The spirit of teamwork and dogged determination drove us to construct the very best tax processing systems in the world," said Revenue Commissioner Mitchell Adams. The department's push for more efficient tax filing systems is reflective of the efforts of the administrations of Governor William Weld and Governor Paul Cellucci to provide better government at the lowest possible cost to the taxpayer.

"The combination of advanced client/server technology and comprehensive data capture, storage and retrieval capabilities has made Massachusetts' Department of Revenue tax processing system unique among state tax systems. The award is a tribute to the dedication and commitment of many DOR employees of whom I am very proud," said Adams.

See the IT Bulletin's Winter 1997 issue (Vol. 3 No. 1) for a description of DOR's Telefile and Imaging systems. ♦

MGIC Expands Range of Activities & Membership

The Massachusetts Geographic Information Council (MGIC) resumed activities in September, after a two-month summer hiatus, by holding a unique four-hour session. For an hour before and an hour after the regular meeting, GIS vendors were available to discuss their services and products with MGIC members. During the regular two-hour user meeting, several speakers presented a variety of applications using GIS in transportation planning. MGIC will continue to expand its range of activities and membership in FY98 by holding user meetings at various locations around the state and by co-sponsoring meetings and conferences with other organizations.

During the past year, the MGIC mailing list has been expanded to nearly 2,000 names including the mailing lists of regional planning organizations and professional organizations such as the Massachusetts Association of Assessing Officials (MAAO). This past year's meetings have been held in combined meeting rooms located in the Transportation Building at Park Plaza to better accommodate the larger group.

After a couple of years with very little activity, MGIC resumed a regular schedule of end-user meetings in January 1997. Topics presented from the January through the June meetings included: summaries of the current use of GIS in government and the private sector; demographics and GIS; successful GIS implementation in municipal government; Municipal assessing and GIS; and GIS and the utilities.

MGIC meetings are usually held on the first Tuesday of each month and are open to all interested parties whether currently using GIS or contemplating its use. Meeting announcements are mailed about two weeks before each meeting and are also posted at: <http://www.hdm.com/neurisa2.htm>. For more information on MGIC and the user meetings, contact Carl Nylen of MassGIS at (617) 727-5227 x323 or Carl.Nylen@state.ma.us. To get on the MGIC mailing list, contact Elaine Socha of ITD at (617) 973-0865 or Elaine.Socha@state.ma.us. ♦

RESOURCES

Year 2000 Web Sites (see <http://www.state.ma.us/y2k/> for more listings)

See these web sites for information about major state vendors' products and Y2K compliance.

VENDOR	WEB SITE
Data General	www.dg.com/products/html/year_2000_compliance.html
Digital	www.digital.com/year2000
IBM	www.ibm.com/ibm/year2000
Microsoft	www.microsoft.com/cio/articles/year2000faq.htm
Oracle	www.oracle.com/support/html/year2000.html
Unisys	www.unisys.com/marketplace/year2000
Wang	www.wang.com/corp/pressrel/p9705280.htm

SPG Provides Consulting Services to State Agencies

The Strategic Planning Group (SPG) of the Information Technology Division has been assisting various state agencies as they deal with information technology issues. SPG can assist in various areas ranging from the development of a strategic vision for the use of information technology to advice regarding an upcoming technology procurement.

SPG recently assisted the Children's Trust Fund (CTF) identifying and coordinating implementation activities with various ITD units to establish a connection to the state's Wide Area Network. CTF now has access to the Information Warehouse and Document Direct and is thereby able to satisfy its immediate business need for automated financial reporting. SPG also helped to transition the Worker's Compensation application from PERAC to HRD subsequent to a legislatively-mandated reorganization. Staff is also assisting the Division of Health Care Finance and Policy in its efforts to better integrate its IT and business planning functions.

Areas in which SPG can be of assistance include:

- formulating strategic IT plans;
- planning major technology procurements;
- assessing projected equipment purchases in light of the Commonwealth standards and strategic direction;
- determining how IT can be applied in the organization to re-engineer business processes and gain efficiencies;
- researching new technologies and identifying current state efforts in those areas;
- identifying available resources which can help in addressing various IT needs and coordinating those resources where appropriate.

State entities interested in requesting consulting services from SPG should contact Val Asbedian, Director of Strategic Planning at 973-0762.

Oracle Access to Commonwealth's Information Warehouse

ITD is offering a new service that will allow Oracle-based applications to access the Commonwealth's MMARS Information Warehouse directly. The new service is made possible by Oracle's "Transparency Gateway," a software product that reads Microsoft SQL Server data from within an Oracle application and presents it as though it is integrated with the Oracle application. The ITD Data Center at the Massachusetts Information Technology Center (MITC) in Chelsea has installed a server for this gateway in response to a requirement of the Department of Social Service's FamilyNet project. The new service will not only meet the needs of DSS, but also may be utilized by other Oracle applications throughout the Commonwealth. For more information, contact Domenic Musto at 617-660-4466 or at Dom.Musto@state.ma.us. ♦

INFORMATION TECHNOLOGY DIVISION

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The *Information Technology Bulletin* is a quarterly newsletter of ITD's Strategic Planning Group. One of SPG's tasks is to act as a clearinghouse for IT information. This publication furthers that goal. Please send correspondence to Managing Editor, Elaine Socha, the Information Technology Bulletin, Room 801, One Ashburton Place, Boston, MA 02108.

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Photos by Jerry Shereda

A MESSAGE FROM THE CIO

The dog days of summer -- what better time for an annual "what's hot" list (I'll save the "what's not" list for midwinter).

What's Hot:

Increasingly, it looks as though Microsoft is staking its reputation for the business desktop on Windows NT Workstation. If you're bringing in desktop automation for the first time, or making an upgrade from DOS or Windows 3.1/3.11, you may want to go straight to NT. If you have Windows 95, you may want to plan the move to NT Workstation Version 5.0 next year, instead of Windows 98.

DVD disk drives have started appearing on consumer PCs. The DVD disk, which looks and operates like a CD-ROM, but holds anywhere from 4.7 to 17 billion bytes of information (i.e., you can fit miniature data warehouses, lots of training videos, and who knows what else on one of these things). Not time to rush out and buy these yet, but a development that should give people pause when they are thinking about next year's PC configurations and business applications.

Speaking of PC configurations, a very helpful (but highly technical) look at the near-term future of PCs can be found in the PC98 personal computer design specifications being drafted by Microsoft and Intel and published on the web at <http://developer.intel.com/design/PC98/>. This is useful reading for any systems director or LAN manager.

Finally, electronic commerce technologies (enabling secure transactions on the network, which in turn enables on-line government) are rapidly proliferating and maturing on the market. SSL, S/MIME, SHTTP, X.509v.3, SET, digital signatures, certification authorities, etc., are amongst the alphabet soup and technical terrain that need to be crossed in pursuit of simpler, more efficient, and more secure connectedness to our constituents and providers. Dan Greenwood, ITD's Deputy General Counsel, should be contacted at (617) 973-0071 if your agency is planning on making use of digital signature technologies. It is especially important that you provide advance information on such initiatives, because fragmented use of such technologies, which inconveniences all of our constituents and providers, is the undesirable alternative.

Hope your dog days were great!

Sincerely,

T. Louis Gutierrez

INFORMATION TECHNOLOGY

B U L L E T I N

Vol. 3 No. 2

 Executive Office For Administration & Finance
 Information Technology Division

Spring 1997

EOTC Secretary Promotes Intelligent Transportation Systems



A three vehicle accident occurs on Route 128 in Dedham at 7:30 a.m. on a Thursday morning in May. In less than a minute, the Massachusetts State Police Communications Center

in Framingham is notified that an accident has occurred and its location. Within minutes, the incident has been verified, additional details gathered and a response initiated. All this through the use of advanced technology and an incident management effort called the *SP Program.

On a snowy January afternoon, commuters and travelers in the metropolitan Boston region obtain up-to-the-minute information on travel conditions through SmarTraveler, a state-of-the-art nationally recognized Advanced Traveler Information System. Throughout this stormy day, the SmarTraveler system handles over 15,000 inquiries to the audiotext system. The information, assembled from fast and slow scan television cameras, the State Police and other agencies, allows travelers to make informed choices.

These stories provide just a glimpse of the wide array of projects and programs involving advanced technologies moving forward at the direction of the Secretary of Transportation

James J. Kerasiotes. Utilization of advanced transportation technologies to improve the safety, productivity and efficiency of transportation in the Commonwealth represents a key component of the projects in operation or being planned by the state's transportation agencies.

As Secretary of Transportation, Mr. Kerasiotes directly oversees the Massachusetts Highway Department (MassHighway), the Massachusetts Bay Transportation Authority (MBTA) and the Massachusetts Aeronautics Commission. He also provides guidance to the Massachusetts Turnpike Authority (MassPike) and the Massachusetts Port Authority (MassPort). In his capacity as Secretary of the Executive Office of Transportation and Construction (EOTC), Mr. Kerasiotes serves as the Chairperson of the MBTA, MassPike and each of the Commonwealth's Metropolitan Planning Organizations.

One of the primary transportation problems in urban areas of Massachusetts and many other parts of the nation which confronts transportation agencies is congestion. Traditionally, the problem of congestion has been addressed by adding new highway lanes or expanding mass transit. The advent of intelligent transportation systems has opened new opportunities. Examples of initiatives promoted by Secretary Kerasiotes include:

- The SmarTraveler Program, which uses an advanced audiotext system to disseminate real-time traveler information, is managed by MassHighway.
- The use of closed circuit television cameras in managing the HOV Lane on I-93 and as part of a comprehensive rehabilitation program for the Sumner and Callahan tunnels by MassPike.
- A 5-year \$25 million upgrade of the Operations Control Center for the MBTA that will provide real time automated vehicle identification and schedule adherence information.
- Design and construction of a short range communication system by Massport to automate and streamline ground transportation operations at Logan Airport.

EOTC Secretary

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IT Bond Update: HR/CMS

At the Comptroller's Open/Close meeting held on April 9, Personnel Administrator Joe Trainor announced that the new integrated Human Resources and Compensation Management System (HR/CMS) will shortly be ready to move forward. He indicated that the final HR/CMS contract would be signed soon leading to a 32 month project during which Andersen Consulting will provide system integration services to assist the Commonwealth in implementing PeopleSoft, Inc.'s human resources and payroll package.

HR/CMS was authorized by the 1992 Information Technology Bond Bill to replace the existing legacy human resource and payroll systems - PMIS, CAPS and MAGIC. According to the project overview developed by the Human Resources Division (HRD), these systems:

- do not fully meet the Commonwealth's business requirements and have hobbled the Commonwealth's ability to attain key policy objectives and implement new programs;
- are difficult to use for beginning and even expert end users; and
- are extremely difficult, time consuming and expensive to maintain and enhance.

HR/CMS will be a unified, statewide and fully integrated application based on proven, powerful client/server technology using a Microsoft Windows based graphical user interface. It is anticipated that HR/CMS will provide a rich and adaptable set of functions and capabilities to meet the Commonwealth's human re-

source/compensation management needs today and into the future. When fully implemented, HR/CMS will cover more than 84,000 employees, contractors and other individuals throughout all branches of State government.

PeopleSoft is a client/server application pioneer and market leader and its human resources and payroll product suite has been implemented in many Fortune 1000 companies and in such states as Kansas, Minnesota and Vermont. Last fall, the State of New York began to implement PeopleSoft to process payroll for over 250,000 employees. Andersen Consulting has an extensive track record in implementing PeopleSoft applications serving as the systems integrator for the Kansas, Minnesota and New York projects and has developed many extensions to the PeopleSoft product to meet public sector requirements.

At the Open/Close meeting, Trainor said that an interesting aspect of the implementation is that sixty percent of the work effort will be completed by the state and forty percent by the vendor. Equally important, the Commonwealth will not customize the PeopleSoft software to ease upgrades to future releases and to reduce development and implementation costs. "The opportunity and challenge we face is tailoring our business practices to the software," he said. He also credited the members of the project team for the long hours they dedicated to finally bringing HR/CMS closer to reality. Through their hard work, he said the Commonwealth will enhance its ability to manage its workforce and deliver high quality, cost effective human resource programs and services. ♦

EOTC Secretary

Continued from page 1.

- In cooperation with the State Police, MassHighway and MassPike, established a statewide system for emergency call-in via cellular telephone by dialing *SP (*MSP west of Worcester) involving signing, mile markers and an advanced communications center.

In the future, advanced systems for highway automation might enable highway capacity to be expanded without adding lanes by improving surveillance, verification and dispatch of emergency vehicles, or through schemes that automatically control traffic signals in response to changing conditions. Appropriate technology applications, especially in the collection of real-time data, data management and data dissemination in the realm of Advanced Traveler Information could also be used to induce changes in traveler behavior. New technologies for automated toll collection and fare payment systems also provide new opportunities to

reduce delays and improve overall operating costs.

Intelligent transportation systems provide transportation organizations with new ways of approaching today's transportation needs. Intelligent transportation systems bring the concept of a seamless transportation system closer to reality by requiring that individual agencies share information and that operational decisions made within each system such as sign messages, alternative routing, signal timings, etc., consider current conditions and impacts on other agencies.

Secretary Kerasiotes was appointed Secretary of Transportation in 1992 and since then he has acted to bring financial responsibility and increased productivity to the state's transportation agen-

EOTC Secretary

Continued on page 9

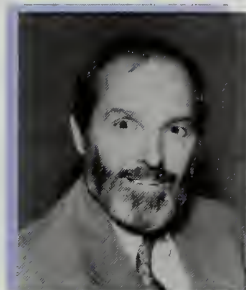
RMV CIO Focuses on Customers

To David L. Lewis, Chief Information Officer for the Registry of Motor Vehicles, the word 'customer' means a lot. The RMV is the largest non-tax revenue maker in the Commonwealth, taking in over one billion dollars in direct and indirect revenues each year. "However you measure it, the RMV is a very large transaction business," said Mr. Lewis. And a business of that size means lots of customers.

"Without fail, we touch almost everyone in the Commonwealth — one way or the other — through license renewals, automobile registrations, accident reports, titles, etc.," said Mr. Lewis. "Sometimes it is even difficult to clearly define who our customer is," he said citing the police, insurance agencies, banks and car owners as some examples of those who interact with the RMV. One of his goals as CIO is to try and make it easier for these customers — wherever they come from — to deal with the RMV while also improving the quality of the data that the agency keeps.

As an example, Mr. Lewis pointed to a new program that allows automobile dealers to issue registrations on site. This time saving application is currently available through approximately one hundred dealers who utilize a dedicated peer to peer system connected to the RMV. There are plans to expand this system statewide in the future. The RMV is also working with area banks on electronic lien transactions to speed up the car buying process.

There are also a number of other examples of speed and efficiency that can be attributed to information technology at the



RMV. Last year, the agency implemented a very successful program that allows drivers to renew their registrations or pay citations over the Internet. Soon customers will be able to purchase license plates over the Internet as well.

Another successful use of information technology that Mr. Lewis cited "is not real visible or glamorous but nonetheless important." The RMV now has the capability to capture facial images as well as signatures on driver licenses. This identification program, which helps cut down on the chances of fraud, ties into a photo imaging system that began approximately two years ago. Approximately one million images are now on file.

Mr. Lewis said that the RMV is always willing to try innovative ideas and having a Registrar with an entrepreneurial background helps. "We are willing to take risks but we also remember that we need to think through who is going to be at the other end of the transaction," said the CIO. Mr. Lewis also has a strong back-

ground in information technology innovation.

He was initially recruited in 1985 by Administration and Finance to design and build a replacement for the RMV's antiquated registration and licensing systems and to automate as much of the agency as possible. As part of this effort, he issued a Request for Proposals, selected a vendor and undertook a twenty-two month, \$15 million development that resulted in the implementation of a large integrated, on-line system known as ALARS (Automated Licensing and Registration System). ALARS currently handles \$700 million in on-line payments and \$425 million in indirect payments each year, and 900,000 to 1,000,000 transactions daily.

In 1992, Mr. Lewis became an employee of the RMV as Senior Deputy Registrar and Chief Information Officer. He is currently responsible for Licensing, Registration, Titling and Suspensions policy, Customer Service/Telephone Center and Management Information Systems. Mr. Lewis

has worked for the state for 25 years and is involved in a number of national information technology committees. He has an MBA from Suffolk University, an undergraduate economics degree from New England College and a certificate from Harvard University's Kennedy School of Government. ♦

***"However
you measure
it, the RMV is
a very large
transaction
business."***

— Open/Close●

Closing out FY 97 and opening FY 98 were the topics of the Commonwealth's twelfth Closing/Opening session on April 9th and teamwork was high on the agenda.

Secretary of Administration and Finance Charles Baker got the ball rolling by thanking the standing room only crowd at the Federal Reserve Building for their efforts over the past year. Secretary Baker pointed to the success of the Commonwealth's most comprehensive review of regulations completed to date and the successful efforts at procurement reform. Some of these efforts focused on the benefits of information technology and "now we're using the Internet more than the post office," he said. As an example, he pointed out that there are now over 300 vendors registered electronically and the state's web site is receiving approximately 10,000 hits per month.

Regarding the Year 2000 (Y2K) challenge, Secretary Baker expressed his confidence in the problem solving skills of those assembled. "This is certainly an issue that needs to be dealt with in a comprehensive way," he said. But the Secretary expressed his belief that time, attention and hard work will help solve the problem. "And the people here have demonstrated they're not afraid of these things," he said.

The Commonwealth's Chief Information Officer, Louis Gutierrez echoed the Secretary's sentiments and cautioned against waiting too long to take action on Y2K. "The earlier people begin addressing the problem, the better," he said. "If you wait until this time next year it will be too late." The CIO distributed a compre-



hensive guidebook on meeting the Y2K challenge that will serve as a resource to those in attendance. The document included a survey from the State Auditor's Office, which every department will be asked to complete. In addition, every department will be asked to identify a Y2K coordinator.

CIO Gutierrez also focused his attention on the 'Big Buy'. Under the 'Big Buy', purchasing power is pooled to obtain volume discounts. Over the past three years, various departments have purchased more than 2,600 PCs through this program.

Comptroller William Kilmartin provided updates on past successes that had been funded by IT Bond I money. For example, he announced that Electronic Benefits Transfer (EBT) was implemented in Southeastern Massachusetts on April 1 and will continue to be implemented throughout the state during the spring and summer. With EBT, instead of food stamps and welfare check, the money is deposited into an account for each Department of Transitional Assistance client. The money is then accessed with a debit card at ATMs or grocery store point of sales (POS) devices. This approach lowers operating costs by approximately one million dollars per year (the program will pay for itself in five years) and simultaneously reduces the opportunities for fraud and mainstreams the clients into electronic banking. The Comptroller stated that in the future, other types of electronic commerce would be deployed.

Other speakers also provided updates and reviewed some key information regarding closing the FY97 books and opening the FY98 books. Deputy Comptroller Susan Kanak informed the

● Meeting —

group that her office is planning to implement Y2K compliant four digit years (on screens and reports, and in the database) in MMARS over a long weekend in February 1998. She also reported on improvements in the 1996 Single Audit over the prior year and announced that reports are available on the Internet from inside MAGNet at <http://www.osc.state.ma.us/> and from outside MAGNet at <http://www.state.ma.us/osc/>. OSC Bureau Director Kathie Still reviewed key dates relative to the closing of the FY97 books and Deputy Comptroller Elizabeth Kilcoyne reviewed key elements relevant to the opening of the FY98 books.

Other featured speakers on the agenda included Tom Graf from the Budget Bureau who spoke on some key budget related topics, reinforced critical dates and thanked everyone for their support and cooperation. Personnel manager Joe Trainor gave an update on HR/CMS (see related story on page 2). Philmore Anderson, the State Purchasing Agent reported that the Commonwealth is in the throes of procurement reform and some of the impacts have included the elimination of 45 pages of regulations. "We are fostering better planning, getting better contracts and better contract management," he said.



Gary Lambert spoke on Comm-PASS and recognized the team members who have worked so hard for the past year. He stated that Comm-PASS underwent three enhancements in one year and became live as of March 12, 1997. With Comm-PASS, paper distribution of solicitations will cease next year and will be all electronic. In addition, Kyle Keady from the Treasury announced that direct deposit of the weekly draw for CAPS departments will soon be available. ♦



Opposite page: Secretary Baker thanks the participants for their efforts over the past year.

This page, top: Comptroller Kilmartin describes the state's growing electronic commerce activity.

Bottom: CIO Gutierrez urges early action in meeting the Year 2000 challenge.

Photos by Jerry Shereda.

Who's Doing What Regarding The Year 2000

ITD Y2K Awareness Day

The Information Technology Division (ITD) held a Year 2000 Awareness Day on April 2, 1997 on the 21st floor of One Ashburton Place in Boston. There were approximately 100 participants who came to hear the speakers and meet the vendors. In addressing the group, Lieutenant Governor Paul Cellucci emphasized the commitment of the Weld/Cellucci administration toward making information technology investments to bring the Commonwealth into the modern world. He said, "The Commonwealth is meeting the Year 2000 challenge head on." Lieutenant Governor Cellucci stated that this stance is important for the economy, commerce and public safety.

In his opening remarks, CIO Louis Gutierrez reviewed a schedule of critical deadlines in the Y2K work effort. He said, "This is absolutely a strategic system going to the heart of statewide service delivery. It's not a glamour job but a bread-and-butter job that has to get done right." CIO Gutierrez also took the opportunity to introduce the Strategic Planning Group's new director, Val Asbedian.

Deputy State Auditor John Beveridge described the survey being mailed to all executive branch agencies and constitutional offices to determine their awareness and plans for dealing with the Y2K challenge. Deputy Auditor Beveridge indicated that the purpose was to provide assistance with managing the Y2K issue.

Several vendors on OSD's consulting services blanket contract who also offer Y2K services were available to discuss these services and also to speak on various Y2K issues. Edmond Andersson of System Resources Corp. described the MMARS update project. Clifford Smith of Costello Associates addressed the topic of vendor software management. David Antonitis of Intermetrics described the Y2K assessment process; Johnson Hart of Peritus spoke about conversion; and Michael Sicuranza of DSD Labs spoke on testing. In addition, the topic of Y2K contractual and legal issues was tackled by Jeff Jinnett of LeBoeuf, Lamb, Green & MacRea, LLP.

ITD's Y2K coordinator Marcia King moderated the event and announced plans for ITD to host another Y2K Awareness Day on



Lieutenant Governor Cellucci addresses the Year 2000 Awareness Day participants.

June 12, 1997. The June event will emphasize the activities of desktop software vendors such as Microsoft and Oracle, and telecom vendors such as NYNEX and Lucent, in making their products Y2K compliant.

Auditor's Survey Issued

The Office of the State Auditor issued their Year 2000 survey in April to all executive branch agencies and constitutional offices. The purpose of the survey is to assess awareness and plans for dealing with the Y2K challenge and to identify where assistance may be required. The survey is included in the material on the Y2K Web site at <http://www.state.ma.us/y2k/>.

New England Y2K Conference Planned

In interactions with Y2K coordinators from other New England states, ITD's Year 2000 coordinator Marcia King has begun preliminary discussions about a possible New England Year 2000 conference in the fall of 1997. Check out ITD's Y2K Web site for further information at: <http://www.state.ma.us/y2k/>. ♦

Year 2000 Resources

OSD's Year 2000 Activity for Statewide Contracts

The Operational Services Division (OSD) is proceeding with efforts so that all IT contracts will be Year 2000 compliant. The new PBX contract has compliance provisions, and all other contracts will have these provisions in the future. All new statewide contracts from this date forward will have requirements for year 2000 compliance for all products, services and systems. Existing contracts will be amended at renewal time. Until then, ordering departments need to specify the year 2000 compliance requirement with all orders and requests for quotes.

OSD is also surveying vendors on existing contracts about Y2K compliance with the objective of making this information available to all departments and Commonwealth entities so that the state will be making purchases only from Year 2000 compliant vendors.

Year 2000 Web Sites (see Winter 1997 issue for more listings)

Massachusetts

ITD: RFR and contract language	http://www.state.ma.us/y2k/
DOR's Division of Local Services	http://www.state.ma.us/dls
Operational Services Division	http://www.state.ma.us/osd/osd.htm

Other States

Nebraska	http://www.das.state.ne.us/das_cdp/rfp/inet.htm
Virginia	http://www.cim.state.va.us/cdc/index.html
Texas (re agency assessment)	http://www.dir.state.tx.us/
Texas U. (re vendor certification)	http://titanium.utsystem.edu/itmc/yr2000/

Other Organizations

Com.Links Magazine	http://www.comlinks.com/
LeBoeuf, Lamb, Green & MacRea, LLP	
Articles re legal issues	http://www.llgm.com/FIRM/articles.htm
Official Y2K Website	
Re: Legal Issues	http://www.Year2000.com/y2karchive.html

Assistance Available from ITD's Strategic Planning Group

The Information Technology Division's Strategic Planning Group (SPG) will provide three types of support services with regard to the Year 2000 Project:

SPG will foster awareness and exchange of technical information by hosting the monthly meetings of the Massachusetts Government Year 2000 User Group; by including Year 2000 information in each quarterly issue of this newsletter; by hosting Year 2000 awareness and vendor days over the life of the Project; and by maintaining a Year 2000 Web site at <http://www.state.ma.us/y2k/>.

SPG will provide coordination and support by making available two Web-enabled PC's so that agencies without Internet access can do Internet research on the Year 2000 at SPG's location (Room 801 at One Ashburton Place in Boston); by maintaining a library of Year 2000 information; by assisting agencies in selecting tools for Year 2000 fixes and in preparing assessments and plans to address the Year 2000 challenge; and by publishing standards for definitions of Year 2000 compliance and by suggesting RFR and contract language.

SPG will monitor statewide efforts and report on progress by maintaining a database to track Year 2000 assessment, planning, validation and implementation activities by agencies; and by working with the State Auditor's Office to analyze information gathered in the Auditor's survey described on the opposite page.

Massachusetts Electronic Records and Signatures Act

As a major transaction and information processor, state government has made extensive use of computer systems since the 1970s. The explosive growth of the Internet, however, is ushering in an entirely new era in the way the government interacts with citizens, customers, regulated entities, vendors, and any other group that deals with the government. The application of Internet-based electronic commerce solutions to the business of state government has brought us to the dawn of on-line government.

Massachusetts is already a national leader in this field. The Registry of Motor Vehicles web site (<http://www.state.ma.us/rmv>) includes an "Express Lane" where people can renew registrations, pay citations, and order duplicate registrations using a credit card, as well as apply for disabled placards and plates and vanity plates. The RMV has the distinction of offering the first Internet-based services of any government entity in the country. In addition, the Division of Banks and the Office of Consumer Affairs will shortly introduce a service that will allow banks and other financial institutions to submit weekly mortgage rate information via the Internet. Because DOB requires this information to be signed, they have been working with OCA and the Information Technology Division to use sophisticated encryption technology to authenticate these submissions. Once operational, these will be the first authenticated Internet transactions offered by any government in the country.

Despite these exciting advances, one of the factors slowing more widespread use of the Internet for government transactions is the legal uncertainty surrounding the use of electronic media rather than traditional paper-based systems. For example, a search of the Massachusetts General Laws reveals over 4,500 sections that refer either to written documents or signed documents. This has generated substantial uncertainty as to whether an electronic transaction will have binding legal effect.

To address this uncertainty, the Information Technology Division, at the direction of the Executive Office for Administration and Finance, has been working to draft legislation that would confirm the ability of state agencies to use electronic transactions even when there is a law requiring a written or a signed instrument. The Massachusetts Electronic Records and Signatures Act (MERSA) is designed to validate on-line government without forcing agencies to abandon paper-based systems until they are ready to do so. A copy of the latest version of MERSA is available on the ITD legal department's web site (<http://www.state.ma.us/itd/legal>).

In brief, MERSA states that where any law requires a writing, that law is satisfied by a "record." The statute defines a record as "information that is inscribed on a tangible medium or that is stored in an electronic or other medium and is retrievable in perceivable form . . . [including] electronic records and written records." Regarding

signatures, MERSA provides that where any law requires a signature of a person, that requirement is met by that person's electronic signature. In addition, MERSA explicitly states that agencies "may create and receive electronic records in lieu of written records, and may also convert written records to electronic records." Realizing that not all agencies are ready to support electronic transactions, MERSA provides that nothing in the statute shall be construed to require any agency to use or permit the use of electronic records or signatures.

While several states have already adopted so-called "digital signature" laws, MERSA represents a new approach that is rapidly gaining favor with other states. Unlike the first digital signature law enacted by Utah and copied by several other states, MERSA is "technology neutral" in that it does not specify the type of technology that parties must use to gain the benefits of the law's provisions. In addition, MERSA is non-regulatory, whereas Utah-style laws impose stringent licensure requirements for certain companies that provide services related to digital signatures.

Anyone interested in learning more about MERSA, digital signatures, or on-line government, should contact Ray Campbell (ITD General Counsel, 973-0093) or Dan Greenwood (ITD Deputy General Counsel, 973-0071). ♦

Pilot Program Joins Franklin Registry of Deeds with Secretary of State

There has been considerable publicity lately regarding the Commonwealth of Massachusetts assuming some or all of the duties of county government. A number of bills have been filed in this regard and one piece of legislation in particular, HB 3184, seeks to transfer the county Registries of Deeds to the administration of the Secretary of State's office.

There are currently 21 Registries of Deeds offices throughout the 14 counties of Massachusetts. These offices received and processed nearly 1.5 million documents during FY 96, generating revenue of nearly \$110 million. However, the filing and administrative procedures differ greatly among the various offices. Some Registries of Deeds offices in counties such as Middlesex and Essex are at the forefront of computer technology while other smaller offices, particularly in the western region of the state do not have the same resources. Recognizing these disparities and the coming changes to county government, a report developed by a special Registries of Deeds Transfer Study Committee states, "With the uncertainty concerning the future of county government, it is imperative that an orderly transition be effected to ensure that high standards of service and efficiency are maintained."

The study committee included Secretary of State William Francis Galvin; Michael J. Ring, President of the Massachusetts Registers and Assistant Registers of Deeds Association; and Harry M. Grossman, Director of the Division of Local Services in the Department of Revenue. They came up with a number of recommendations (which have been filed as HR 3184), including keep-

ing the position of Register of Deeds an elected office and including the 21 Registries in a single line item within the Secretary of State's budget.

If the legislation is successful, the transfer will most likely be modeled on what is currently occurring in Franklin County. There, the Secretary of State's office has already begun the process in conjunction with the Franklin County Register of Deeds. Part of that process has included upgrading computer equipment and connecting the Franklin County office to MMARS and e-mail. According to Assistant Secretary of State Kevin Harvey, if the Registries of Deeds are eventually transferred to the Secretary of State's office, Franklin County will serve as a prototype. "While we do not want to reinvent the wheel for those counties that are computerized, we want to create a standard package that will modernize and reduce the paperwork in the Registries of Deeds offices," he said.

His statements were echoed by the Secretary of State's Chief of Staff Jack McCarthy. "If the transfer comes to pass, it must be properly funded and maintained to avoid chaos with the property owners" he said. "We want to make it easier for consumers to get access to information." He said that by bringing all the information under one agency and upgrading offices like Franklin, a better sharing of data can occur while the individual offices are freed up to serve their local customers. "It's not unlike our relationship with town clerks who continue to run the day to day operations," he said. ♦

EOTC Secretary

Continued from page 2.

cies, while at the same time working to improve the safety and efficiency of the system. The MBTA budget has been cut by over \$100 million while service has improved and safety enhanced. MassHighway has launched the nation's most aggressive highway maintenance privatization effort, generating \$17.3 million in savings and benefits. The largest public works project in the country — the Central Artery/Ted Williams Tunnel project, which will be one of the most technologically advanced sections of highway in the world — has moved from design to construction, with more than 300 companies and 9,000 people employed.

Secretary Kerasiotes' efforts have earned him recognition from national periodicals such as the Wall Street Journal and Forbes Magazine. In 1994, he received the Distinguished Service Award from the American Public Transit Association and in 1995, he received the Better Government Award from the Pioneer Institute. He holds a Bachelor Degree from the State University of New York at New Paltz and a Masters Degree from Northeastern University where he serves on the Board of Overseers. He also serves on the Board of Trustees for Hellenic College. ♦

IT BOND II UPDATE:

Education Technology

On April 4, 1997, Governor William F. Weld and Lt. Governor Paul Cellucci announced the third round of grant funding from the Education Technology Bond Bill. The Ed Tech Bond is actually a part of the larger Information Technology Bond Bill II, which was signed into law by the Governor on August 9, 1996. Among other things, the Ed Tech Bond authorized \$30 million for matching grants to local school districts. These grants, which the bill sets at \$30 per student, are awarded to districts that have a local technology plan approved by the Department of Education. To be eligible, districts must match the state money 3:1.

As a result of this announcement, all 203 of the state's 347 school districts that have submitted local technology plans to DOE have been selected for funding. The total amount of grants awarded so far is \$19.7 million. The ten largest recipients to date are: Boston (\$1,898,790), Springfield (\$707,520), Worcester (\$702,570), Brockton (\$451,050), New Bedford (\$437,850), Lynn (\$409,260), Fall River (\$369,810), Newton (\$320,400), Quincy (\$260,880), and Haverhill (\$242,010).

The announcement by the Governor and Lt. Governor was made the day before the state's second NetDay on April 5, 1997. The first Massachusetts NetDay was held on October 26, 1996, at which time the first round of Ed Tech matching grants was announced. NetDay started in California in March 1996 as an industry-sponsored ef-

fort to get volunteers and corporate sponsors to wire schools and provide access to the Internet. Governor Weld and Senator Kennedy are honorary co-chairs of Massachusetts NetDay.

By all accounts, Massachusetts has had one of the most, if not the most, successful NetDay operations in the country. More than 400 schools and 3,000 volunteers participated in the first NetDay, while 450 schools and 3,000 volunteers participated in the second NetDay. In addition, hundreds of businesses in the Commonwealth donated an estimated \$8 million in products and services in support of NetDay. Because of this participation, over half of the state's school districts, and over a third of the state's school buildings, have benefited from NetDay activities. All told, Massachusetts schools have received an estimated \$12 million dollars in support of Internet access as a result of the two NetDays.

In addition to NetDay and the local grant process, there are a number of other education technology initiatives being pursued. The most notable are:

Lighthouse Schools Program

From the 25 districts in the first round of Ed Tech matching grants, the state chose 13 districts to serve as models and mentors (Lighthouse Schools) for other districts. DOE intends to expand this program using federal funds.

Internet Accounts for Educators

ITD and DOE are working to implement the Governor's commitment to provide every public K-12 educator (all 70,000) with a low cost Internet account before the start of the next school year. ITD/DOE recently completed an RFI process and expect to issue an RFR in May to select a vendor(s) to provide these accounts.

Internet Access for Schools

ITD and DOE are exploring the possibility of establishing a blanket contract for schools to purchase high-speed connections to the Internet. The Federal Communications Commission will issue a ruling in May on the "universal service" provisions of the Telecommunications Act of 1996 that is expected to provide schools with discounts ranging from 10% to 90% on the cost of Internet access.

Professional Development

DOE has selected a vendor to provide schools with one-stop information about the full range of professional development offerings available for teachers. DOE also plans to use \$1.2 million in federal funds for needs-based professional development grants for districts. ♦

GENERAL RESOURCES

PC's Available to Commonwealth Employees at Big Buy Prices

Staff from OSD, the Budget Bureau, the Comptroller's Office and ITD once again coordinated a "Big Buy" for Information Technology equipment for state agencies. The Big Buy Team announced that the vendors selected agreed to extend their significantly discounted prices to all Commonwealth employees. Standard configurations (with no additions or substitutions) are available through the end of FY97, at the discounted prices. For more information, see the Big Buy Internet site at <http://www.magnet.state.ma.us/itd/bigbuy/>.

One of the Big Buy vendors, CIC Systems, Inc., has further agreed to make the Hewlett Packard PC Workstation configuration (@ \$1,975) and the AST Notebook Computer configuration (@ \$3,051) available to Commonwealth employees through December 31, 1997. Employees interested in purchasing equipment for their personal use should contact CIC's Stu Kaplan at 617-320-8300 x3155.

NSGIC



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Golf Clinic & Tournament

For more information call NSGIC at 603-643-1600

Commonwealth Standards

The standards for Personal Computers and Servers have been updated. A standard for Notebook Computers has been added. The Commonwealth Web Site contains these and other standards and guidelines as well as white papers and other interesting information. The address is: <http://www.magnet.state.ma.us/itd/standard/>.

Over the next few months, the remaining standards will be updated or replaced.

Information Technology Bulletin: Now Available On The Web

The IT Bulletin is now available on the Commonwealth Web Site at <http://www.magnet.state.ma.us/itd/bulletin/>. Starting with the Winter 1997 issue (Vol. 3 No. 1), each issue will be available on the Web at the same time as the paper copies are mailed. Please let us know if you no longer need to receive a paper copy by sending email from the bottom of the on-line Bulletin's Table of Contents. ♦

INFORMATION TECHNOLOGY DIVISION

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The *Information Technology Bulletin* is a quarterly newsletter of ITD's Strategic Planning Group. One of SPG's tasks is to act as a clearinghouse for IT information. This publication furthers that goal. Please send correspondence to Managing Editor, Elaine Socha, the Information Technology Bulletin, Room 801, One Ashburton Place, Boston, MA 02108.

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A MESSAGE FROM THE CIO

I am writing this issue's message from a plane over western Texas, on one of the new Palmtop PCs running Windows CE (the HP 320LX, which fits in a coat pocket like a calculator, but packs the power of Microsoft Word, Excel, Internet Explorer, organizer tools, and e-mail). If I'm lucky the cell phone in the back of the plane will let me send this to Elaine Socha, newsletter editor, before I cause her to miss publication deadline (and because I work for the most fiscally conservative guy in state government, none of this is on taxpayer nickel -- just an avid technologist exploring the limits). Which all simply goes to the point that we live in a world where powerful processing gets smaller year-by-year, and communications networks -- wireless, fiber, or older infrastructure can connect us together from the remotest places.

We are at the end of Fiscal Year 1997, having seen the many worthwhile initiatives of IT Bond I tapering off, as IT Bond II initiatives begin to leave port. I think it's a good time to pause and thank colleagues for the joint effort that has kept Massachusetts state government information technology momentum going in the face of many challenges.

FY98 is the year that we need to complete the lion's share of remediation work for Year 2000 compliance. Let's put this challenge to rest early.

Sincerely,
T. Louis Gutierrez

INFORMATION TECHNOLOGY

B U L L E T I N

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Information Technology Division

Winter 1997

Public Safety Secretary Advances Technology Improvements

Secretary of Public Safety Kathleen M. O'Toole has oversight of over 10,000 employees in twenty agencies, boards and commissions that have a combined budget of over one billion dollars. When Secretary O'Toole was appointed in 1994, she knew that her vast experience in law enforcement would serve her well. What she did not anticipate was her role in advocating the benefits of information technology.



"When I first arrived at the Executive Office of Public Safety (EOPS), I recognized that we had to enhance the way we do business," said Secretary O'Toole. Working with her newly appointed Secretariat Information Officer (SIO) Craig D. Burlingame, Secretary O'Toole developed a partnership with the Information Technology Division to implement a three phase information technology program.

In developing a plan, all parties understood that each step was a building block to the future. "The first order of business was to get the Executive Office's house in order," said Secretary O'Toole. "For example, I had an old 286 sitting on my desk collecting dust." After upgrading the office's technological capabilities (including such basic functions as e-mail) the secretary and her team directed their attention to the EOPS agencies.

The goal in the second phase was to develop integrated office technology within the secretariat's agencies. "We had separate agencies with outdated equipment who were all doing their own thing," said Secretary O'Toole. She stated that if EOPS was going to be successful, "we were not going to have 20 different agencies with their own individual technology goals." The Secretary feels that establishing a defined goal and developing a workable plan for IT changes has already paid off. SIO Burlingame pointed out that eighty percent of the EOPS agencies have already upgraded their technology and are now connected to their own LAN/WAN. Through this interconnection, agencies now have the ability to communicate with each other, a practice that was not always evident in the public safety community in the past.

The third and most ambitious phase in the Secretary's plan is to design and implement a fully integrated public safety voice and data system. While acknowledging that this is an ever evolving plan, Secretary O'Toole proudly points to a number of early accomplishments.

See **PUBLIC SAFETY SECRETARY**
Continued on page 5.

The Year 2000

There are only about 1,000 days left before the year 2000. Only about half of those 1,000 days can actually be used to solve the century problem because: lots of time will be required for testing and all the work has to be completed before Fiscal 2000 begins in mid-1999.

This issue of the IT Bulletin is almost entirely devoted to the Year 2000: what the problem is, how to attack it, who's currently doing what about it already, as well as resources available to assist those who haven't yet begun or have only just begun. In future issues, the IT Bulletin will continue to update the Year 2000 calendar of events and to present other relevant resource information.

YEAR 2000

Continued on pages 3-5

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DOR's Innovative Filing Systems

On January 14, 1997, Revenue Commissioner Mitchell Adams flipped the switch on the Telefile machine, officially activating DOR's computerized tax filing systems and signaling the start of the 1997 tax season. Hundreds of thousands of Massachusetts taxpayers are expected to Telefile their 1996 state income taxes this year. Last year Massachusetts was the first state to offer PC filing for Telefilers only. This year Massachusetts is one of only two states in the nation that will allow taxpayers to download filing software from the World Wide Web for both Telefile and Form 1, and transmit their returns to DOR electronically.

"We are truly turning the traditional tax processing world on its ear. DOR has long been a trail-blazer for new technology, and now we're able to give taxpayers something back for all the hard work that's been put into developing these cutting-edge systems. Most taxpayers who are owed a refund literally will never have to send another piece of paper to DOR in the future," said Adams.

Telefile is a touch-tone tax filing system that has revolutionized front-end tax processing. After the taxpayer completes a brief worksheet, they place a telephone call to the Telefile system. The call takes about eight minutes and during that time Telefile actually computes the tax return, making calculations on-line and telling the taxpayer how much they are owed in a refund or whether they owe a payment. "Taxes can't get much easier than this. An eight minute phone call and your check is in the mail in four days. We also love Telefile because it saves money in processing costs and it saves trees," said Adams who also said that Telefile

saves in storage costs. "I can hold in the palm of my hand a tape cassette that contains half a million tax returns. Those same returns filed on paper take up 2,000 feet of shelf space. The less space we need to store tax returns, the more money we save," he said.

This is the third year of Telefile for state income taxes; the IRS is in its second year of the program. Last year approximately 400,000 Massachusetts residents who would have otherwise used a paper return used Telefile. "Taxpayers are learning that Telefile is the way to go if you want a refund in four days flat. It's also convenient. We're operating 24 hours a day, seven days a week," said Adams. Also new this year are **credit card payments** for Telefilers who owe less than \$1,000, and **direct deposit of refunds** for those who file electronically through a tax preparer.

Adams also demonstrated the **PC file program for Telefilers**. The program is accessed through DOR's home page on the World Wide Web: <http://www.state.ma.us/dor/>. Taxpayers download software and fill in the return, similar to filling out a paper return, then transmit the return directly to DOR. For those with longer, more complicated returns, DOR is also offering, new this year, **PC filing for Form 1 filers**. All of the PC filing programs and information on DOR can be found on the home page.

For those who will file by paper returns, **DOR's imaging system** will be running at full-speed for the second year. Last year approximately 1.5 million returns were imaged. This year more than 2 million will be imaged. Imaging tech-

nology creates a more efficient system and it saves money. The costs of processing each paper return via the hand-keyed method is \$1.28, where the cost of processing an imaged return is \$.95, a 26 percent decrease. Imaging technology uses high speed scanners that scan and then send images of tax returns to a computer that reads both handwritten and machine-generated returns. Imaging is faster and more accurate than conventional hand-keying methods. Imaged returns capture 50 percent more data than hand keyed returns. Plus, the imaging system creates an electronic file folder for each taxpayer that can be retrieved instantly, compared with a two week retrieval wait for locating a paper return. DOR's imaging system is widely regarded as the most sophisticated of its kind in the public and private sectors.

Another new service for taxpayers is a **telephone information system called "Tax Talk"**. Taxpayers call DOR's main customer service number, 617-887-MDOR (887-6367) where they will find pre-recorded information on 40 tax topics.

Telefiling, PC filing, imaging/data recognition, interactive voice and other new technologies have permitted DOR to downsize from 2,000 employees to 1,500 while productivity has virtually doubled - from \$4.5 million in revenue per employee in FY91 to \$8 million in FY96. "Our pledge is to keep our leadership role in these technologies, because it will mean lower costs, and even better performance and service for Massachusetts taxpayers," Adams said. ♦

The Year 2000

C H A L L E N G E

We've all read the stories about the 104 year old woman who received a letter inviting her to join next year's kindergarten class — when her birth year of "92" was assumed to be 1992, not 1892. We live in an information-based society where most of the information is stored and processed in computers. Most computer systems store and report years as two digits, that is, without explicitly stating the century. During the time since the birth of computers, the century was always 19 and so did not need to be explicitly stated. But in recent years, systems doing future-oriented date calculations have already begun to experience the Year 2000 problem (similar to identifying 104 year old kindergartners). And in a short time the current year will be "00" which is going to create problems unless this century problem is addressed.

In most computer systems, the computer manipulates dates, sometimes in arithmetic calculations, sometimes for sorting, sometimes in comparisons that determine process flow. In the past, these manipulations produced accurate and desired results without explicit centuries because, in most instances, all those dates were in the same century. But when the two-digit year becomes "00", calculations will produce abnormal results: this will vary by system but some of the possibilities include negative numbers that cause the program to terminate before completion, negative numbers that just don't make any sense and are wrong to boot, negative numbers interpreted as positive numbers that look o.k. but are still wrong. Sorts will produce erroneous results, sorting later years ("00") before earlier years ("50" or "90" for example).

This is the crux of the problem, but not all of it. In some systems, 9/9/99 (or something similar) was used to indicate some indeterminate future date or a non-existent termination or expiration date. Well, September 9, 1999 will be upon us soon as a real date, pulling "9/9/99" into routine processing

with erroneous results. A further wrinkle is that the year 2000 is a leap year but will not be recognized as such by many systems, yielding the wrong day-of-the-week for all days after February 28, 2000.

Another aspect of the anticipated problem is that some systems will be ready and others will not so the interfaces between them will be problematic. In these days of electronic commerce (electronic data interchange, electronic funds transfer, and electronic benefits transfer), many systems interface with many other systems, exterior to the organization as well as interior. Systems will have to be prepared to both accept and provide data from and to systems that are Year 2000-compliant and those that are not.

The Year 2000 problem is not unique to Massachusetts state government - it applies to all organizations around the world that are using computers. The problem is not just about mainframes - it applies to midrange systems and PCs, and also to PBXs, faxes, VCRs, automated alarms, doors, elevators and bank vaults - to name some obvious examples. The problem is not just about COBOL- it applies to any and all programming languages and operating systems, and to execs and macros and job control language, to custom spreadsheet and personal data base applications, and to ad hoc queries and report requests.

Many PCs cannot handle the transition to the year 2000. The PC may reset the system date to the BIOS date when January 1, 2000 rolls in. This can be tested by setting the system date on a PC to December 31, 1999 at 11:55 p.m., then shutting off the PC and waiting 10 minutes. When the PC is powered up, the date may have reverted to the original BIOS date rather than showing January 1, 2000.

YEAR 2000

Continued on pages 4 & 5.

SOME APPROACHES TO YEAR 2000 SUCCESS

Now this Year 2000 problem is not difficult to fix, in fact technically it is fairly simple. However, the modifications are labor-intensive and may require additional resources, both human and machine. And a strategy will be needed for handling aspects of the problem beyond a system's data and processes, such as business priorities and system interfaces.

Generally speaking, there are two basic ways to attack the technical problem: data and process.

In the data approach, all date fields are identified and analyzed and the relevant century is added to the data files or data bases. Expansion of a two digit year to four digits most likely will require a data file conversion and an increase in disk utilization, especially if the system contains large quantities of dates. This may cause an increase in processing times and also chargeback costs. If adding century to all date incidents in a system requires large quantities of additional storage space, running old and new versions during parallel testing will greatly compound the problem of space utilization.

If the data approach is pursued, the programmatic handling of input and output will need to accommodate the difference between the stored data and the displayed data. Or the screens and reports will have to be analyzed to determine if they have the space to accommodate century in all those dates. If forms and reports are going to be changed, the users will need to be retrained. If forms are going to be changed, a decision will be required regarding whether the users will be forced to key in the century every time even when, in context, the relevant century is obvious. Wait a minute! This section was supposed to

be about the data solution — what's all this about process?

In the process approach to a solution, one could ignore the data and develop a strategy for processing dates with intelligent assumptions (a birth date is probably in the past; an expiration date is probably in the future; etc.) But then, in order to change the programs, the source code is needed — assuming it is still around. And every changed program needs to be exhaustively tested. Some of these programs most likely have not been touched for years and some thoroughly dependable code may become buggy.

And after all that, the process-oriented solution is still probably an interim solution, only postponing fixing the data. Yet, taking this approach may be a good strategy for getting past the Year 2000 "deadline" successfully. The deadline will vary for systems depending on their usage of dates and implications such as fiscal years. For a lot of applications, January 1, 1999 will be the deadline. For some applications, their owners have already determined that they will not be confronted by the century problem until several or many years after the year 2000.

Regardless of how the Year 2000 problem is approached, testing will comprise a major series of activities absorbing large quantities of human and machine resources. Yet rigorous testing must be performed: some programs will terminate before completion when encountering the year "00", but others will appear to perform normally due to date comparisons and calculations not causing a programmatic error, while still producing erroneous results.

YEAR 2000 ACTION PLAN

If information technology managers have not done so already, now is the time to develop an implementation plan to solve the Year 2000 dilemma for their organization. In identifying the scope of the problem, it may be that some systems, while they need to be converted, will not yield troublesome results if ignored for awhile. Alternately, some very old systems might as well be replaced. But before these decisions can be made, the project magnitude, costs and priorities need to be determined. There are business as well as technical considerations that will come into play in order to balance cost and risks.

Each organization will need to develop its own definition of Year 2000-compliance. In general, it will mean that data outside of the range 1900 to 1999 will be correctly processed in any level of computer hardware and software (files, data bases, programs, firmware, microcode). Achieving Year 2000-compliance, for many organizations, will include managing vendors to insure that their products and any interfaces to those products, support a four digit year format. Some vendors will also offer tools to assist in the conversions.

YEAR 2000 ACTION PLAN

Continued on page 5

YEAR 2000 ACTION PLAN

Continued from page 4.

Further delay in addressing the Year 2000 problem will turn out to have been foolhardy. Some information technology gurus have been actively involved in this issue for years and they assure us that there will be no magical reprieve. The longer you wait, the worse the problem will become. These gurus expect failures to occur; in some instances the expectations are of massive failures. Some gurus expect legacy programmers to command astronomical salaries, bid up by organizations competing for their services as the deadline gets nearer and nearer.

It will be crucial to have some one in charge of an organization's preparation for the year 2000 and that someone will need to have finely honed managerial skills. A schedule of events will be imperative for the Year 2000 count-down in order to measure progress and be aware of risks.

Many vendors offer consulting services for addressing the Year 2000 problem. Seminars and conferences have begun and will likely become more frequent. The World Wide Web contains some sites devoted to this topic. These offerings, like this issue of the IT Bulletin, are available to increase awareness and to provide assistance. So get started!

Public Safety Secretary

Continued from page 1.



Craig D. Burlingame

One such success story is the development of a single inquiry or "one check" system. In this system, police and other law enforcement officials such as the Office of the Commissioner of Probation, the Parole Board or the Department of Correction have immediate access to vital information that may have previously been stored away in an agency file cabinet. "We are now providing vital information on sex offenders, parolees, probationers, outstanding warrants or restraining orders with a single inquiry," said Secretary O'Toole.

SIO Burlingame said that this technology has been made available state wide to every criminal justice agency. He estimated that there are approximately 500 officers across the Commonwealth who are currently using laptops that give them the "one check" capability. Secretary O'Toole envisions the day when everyone in the field will operate in a paperless office, allowing them to focus more time on their public safety duties. "This is industry standard -- if Federal Express can do it, why can't we," she said.

Secretary O'Toole pointed out a number of other technology improvements that have been implemented over the past two and a half years. Many of these applications are the first of their kind in the country.

- Electronic Warrants Management System
- Domestic Violence Registry
- Parole Status
- Custody Status
- Inter-State Probation Compact
- Firearms Licences
- Probation Status
- Sex Offender Registry

A significant accomplishment occurred in 1994 when the state legislature enacted the nation's toughest drunk driving (OUI) legislation. Local police were soon pointing out that the new law created so much paperwork that it took up to two hours to process each single violation. The Secretary directed SIO Burlingame and members of the Criminal History Systems Board (CHSB) staff to move quickly to develop new on-line processing that reduced this time down to ten minutes. Secretary O'Toole uses this example to point out the level of cooperation that has developed between agencies. "You have to understand the lack of communication that historically existed in law enforcement," she said. "I believe there is now an unprecedented level of cooperation. The interaction between agencies made possible by integrated information systems creates positives that clearly out-weigh any perceived negatives."

The Secretary and SIO envision the creation of broader partnerships to make the job of law enforcement easier. For example, both see more integration among agencies on a nation wide scale. As SIO Burlingame stated, "Criminals do not respect state borders." He pointed to the creation of a national sex offender registry as an example of nation wide information sharing.

Secretary O'Toole continues to see information technology as an essential component in public safety. "Technology is not the driver but when we identify a problem, we then examine how technology might provide a solution," she said. "We continually balance law enforcement needs and technological solutions. We have a clear vision but we always need to be flexible." ♦

Information Technology Bulletin ♦ Winter '97

Who's Doing What Regarding

Office of the State Auditor

The Office of the State Auditor, with the assistance of the Information Technology Division (ITD), is in the process of conducting a survey to determine the extent to which the Commonwealth has assessed the impact of Year 2000 compliance for mission-critical systems. The survey can be accessed via ITD's Web site (<http://www.eoaf.state.ma.us>) and responded to by e-mail. Alternately, the survey can be obtained by contacting Robert Buchanan, Information Systems Audit Division, Office of the State Auditor, by phone at 617-727-6200 x73 or by e-mail at Robert.Buchanan@SAO@state.ma.us. In addition to soliciting completed surveys, the Auditor's Office will be conducting site visits at selected agencies to review Year 2000 compliance issues with agency staff. The results of the survey will also be used to identify agencies in need of assistance with Year 2000 issues.

Department of Revenue

DOR has completed their inventory of the year 2000 impacts in their major systems and has developed a year 2000 management team for addressing their problems. Their immediate next steps include: staffing the project from department-wide resources; creating a dedicated testing environment; continuing their cross-divisional planning and strategy sessions; and working with their interagency and business partners in federal and state government to coordinate interfaces.

In January 1997, DOR hosted a Year 2000 Awareness Day at Gardner Auditorium in the State House. The approximately 200 participants represented DOR and its business partners, as well as other Massachusetts state government agencies including Constitutional Offices and the Legislature. DOR Commissioner Mitchell Adams opened the program which included speakers from DOR and ITD, as well as the Information Technology Association of America, BankBoston, Keane Inc., Digital Equipment Corporation, and Unisys Corporation.

Office of the State Comptroller

The Office of the State Comptroller is already planning for the Year 2000 impacts on its systems. Readiness concerns fall into two main categories: state-wide applications and OSC internal systems. For MMARS, date-related issues refer to the two position date field on screens and reports, basic input/output systems, and custom-built office applications. The MMARS system is currently under contract for a 12 to 16 month conversion of screens and reports. The analysis for PCRS and the Information Warehouse will begin soon. OSC internal Y2K system work is well underway.

The Executive Office of Environmental Affairs

EOEA's primary database development platform is Oracle running on a VAX. EOEA began its significant discussions and research for addressing the year 2000 in early 1996. Any application built in the last two years was required to make provisions for the year 2000. However, numerous applications built prior to that are still in use and require modification. EOEA's senior development staff, known as the Core Team, has communicated to the MIS Managers of each EOEA agency the need to consider this project a priority. A few applications have already been corrected due to immediate need. The remaining applications are being worked on as other enhancements are made or as an overall year 2000 conversion effort. The Core Team is also preparing a document to assist developers in the agencies in identifying and correcting Oracle products that are impacted by the year 2000. This document was released to the developers in February. Agencies will also be advised to assess impacts to non-Oracle databases. The Core Team expects that the agency MIS managers will each assign a project leader to this project, if they haven't already, to ensure that progress is made and product status is tracked. The Core Team will monitor the overall secretariat progress on Oracle products using an automated change management tool. Updates and status reports will be provided to the Secretariat's Systems Integration Team on a bimonthly basis.

The Year 2000

Registry of Motor Vehicles

Dates are probably the most common data element that RMV tracks. As a result, RMV approached the storing of dates as a space and performance issue right from the start. The RMV stores dates as a positive or negative number representing the number of days from January 1, 1940. This number is further compressed and RMV ships dates over their telecom lines this way and decompresses/calculates the data at the client site. With this kind of logic in place, the year 2000 issues were not as serious for the RMV as they might have been. The storage of dates on their database was pretty much a non-issue, as the counting method mentioned above takes 2000 into account already (note, RMV will have to do a conversion in 2015 or thereabouts to move the reference date from 1940 to a more current date).

The display issues (for both screen and documents) were an effort as there were many cases where the century had been left off. These were fixed whenever RMV did anything else to the screen or print program and, for those that remained after a certain point, RMV simply went in and fixed all of them. Some were rather interesting: for instance, your license is active until 01/15/00. Not only would you need to change the screen, but also the document itself. And, because of a five year renewal cycle, RMV had to address this issue in 1994 and 1995.

ITD's Enterprise Applications Bureau (EAB)

Massachusetts Management Accounting and Reporting System (MMARS)

MMARS has already run into business processes that need to be able to recognize the new century. Fortunately, temporary, manual solutions have been found that allow the state's financial business to continue successfully.

The Comptroller's Office and EAB completed an exhaustive inventory of all the software components of MMARS at the

end of 1996. They had already decided that MMARS would not be replaced, but instead would be made Year 2000 compliant. Since MMARS is a complex and dynamic application, minimizing future maintenance costs was an important objective. With the General Ledger as the official source of financial data, it was also important to make the century as explicit as possible to reduce the opportunities for future reporting errors. Expanding all the date fields to capture the four character year was determined to be the best option for MMARS.

The MMARS Year 2000 team, comprised of Comptroller and ITD staff, has contracted with a vendor selected from the IT Services blanket to perform all the code remediation tasks. Database conversion and dataset expansion will be done by ITD, while the critical acceptance testing effort will be completed by the Comptroller staff.

Personnel/Payroll Management Information System (PMIS)

PMIS is also getting ready to be made Year 2000 compliant. Although the new Human Resource/Compensation Management System (HR/CMS) is in the works, its timetable leaves too little leeway to guarantee that the new system will be ready in time to replace PMIS. To insure that all the necessary personnel actions can be processed and, mostly importantly, that the payroll can be successfully run, PMIS will be updated.

The PMIS Year 2000 team is just finishing the inventory and analysis phase of this project. The best Year 2000 solution for PMIS will minimize the cost since ease of maintenance is a small concern for an application slated to be replaced in the near future. Bids will be solicited from the IT Services blanket vendors with the goal of starting this project in the spring of 1997.

Departmental Systems

Inventories and analysis of options are currently underway for applications that support the business activities of several departments. By the middle of March 1997, plans are expected to be in place for insuring that these systems are ready for the Year 2000. ♦

The Year 2000

R E S O U R C E S

Commonwealth Year 2000 Users' Group

ITD's Marcia King has started a Massachusetts State Government Year 2000 Users Group. Contact her by phone at 617-973-0711 or by e-mail at Marcia.King@state.ma.us

Year 2000 Publication

Information Technology Association of America: Year 2000 Solution Providers quarterly IT Industry Directory of software tools, conversion methods, professional and consulting services. Call 703-284-5302 or check out <http://www.ita.org/2000cert.htm>.

Industry association offering assistance re: the Year 2000

Information Technology Association of America. Call 703-284-5302 or check out their Web site at <http://www.ita.org/2000cert.htm>.

ITD Awareness Day Agenda (see calendar on page 9)

Topics will include an overview of the Year 2000 Problem, Legal issues, MMARS Update, Vendor Software Management, and Year 2000 Assessment, Conversion & Testing. Speakers will include representatives of Massachusetts state government, Unisys, System Resources Corp., Costello Associates, Intermetrics, Peritus, and DSD Labs.

IT Contract Vendors

A list of vendors on the consulting services blanket contract can be found at <http://www.state.ma.us/osd/memo/memotoc.htm>. Download OSD Update 97 - 14 and DPGS Memorandum 96-25.

Year 2000 Calendar of Events

◆ Y2K Awareness Days

March 5, 1997

Greater Boston Y2K Users Group

Bank Boston, 100 Federal Street, Boston, MA

April 2, 1997

ITD Awareness Day (see <http://www.eoaf.state.ma.us> for details)

One Ashburton Place, 21st Floor, Boston, MA

◆ Y2K Conference

May 20-22, 1997

Year 2000 Boston, Hynes Auditorium, Boston

Sponsored by DCI, 204 Andover Street, Andover, MA 01810,
508-470-3880; <http://www.DCIexpo.com/2000AD/>

Year 2000 Web Sites

◆ General

ITD Year 2000 site

<http://www.eoaf.state.ma.us>

Exec. Office of Admin. & Finance

<http://www.EOAF.state.ma.us>

Comptroller's Office

<http://www.OSC.state.ma.us/2000/intro.htm>

Official Y2K Website

<http://www.Year2000.com>

Info. Tech. Association of America

<http://www.ITAA.org>

Gartner Group

<http://www.Gartner.com>

(For a password, call Marie Carpenito at 617-973-0846.)

Computer Tech. Research Corp.

<http://www.CTRCORP.com>

Federal Government Services Admin.

<http://www.ITpolicy.gsa.gov/mks/yr2000/y201toc1.htm>

Governing Magazine Y2K articles

<http://web.governing.com/governing/92000.html>

National Assoc. of State Information

Resource Executives (NASIRE)

<http://www.NASIRE.org/conferences/y2k/index.html>

◆ Other States

Alaska

<http://www.state.ak.us/local/akpages/ADMIN/info/yr2000.htm>

California

<http://www.Year2000.ca.gov>

Florida

<http://mail.irm.state.fl.us/yr2000.html>

Indiana

<http://www.ai.org/dpoc/>

Minnesota

<http://www.state.mn.us/ebranch/admin/ipo/2000/2000.html>

New York

<http://www.irm.state.ny.us/yr2000/yr2000.htm>

Oregon

<http://www.state.or.us/IRMD/y2k/year2k.htm>

Pennsylvania

<http://www.state.pa.us>

Texas

<http://www.state.tx.us/standards.html>

Washington

<http://www.wa.gov/dis/2000/y2000.htm>

Requirements for Integrated Systems

As the Commonwealth embarks on a second major round of state government technology investment, IT managers must move towards integrated systems in order to better serve the needs of taxpayers, constituents, and the Massachusetts business and civic community. ITD is engaged in several projects that will assist in making integrated systems a reality. Three key projects are outlined below.

Project: X.500 Central Directory

Overview: Starting in 1995, a new strategy was sought to address the following issues for statewide electronic mail: difficulty in passing mail between agencies; problematic gateways between agencies; and synchronizing directories consuming unacceptably large amounts of support staff resources. In 1996, ITD selected Wang, partnered with Control Data Systems, to provide an integrated electronic messaging network with robust messaging and directory services for agencies across the state.

Status: Phase I of the project will enable email users in Massachusetts state government to exchange messages among the following environments: cc:Mail, Microsoft Exchange, Lotus Notes, GroupWise, Banyan VINES, ALL-IN-1, and POP3.

Benefits: Directory synchronization services will be provided between each of these environments which will facilitate easy addressing between all users. Each of the e-mail directories will be populated with all users from every other mail environment.

Contact: Jeffrey Flannery at 617-973-0757.

Project: TCP/IP

Overview: The TCP/IP protocol suite supports the Internet, the single largest computer network in the world. The TCP/IP protocol suite makes internets possible by providing common services over a diverse set of underlying network protocols and hardware. The key protocol in the suite is the Internet Protocol (IP), which provides a common address space and routes packets across an entire internet. The Transmission Control Protocol (TCP) allows extremely reliable data transmission over IP.

Status: The Commonwealth's Core Infrastructure network supports full TCP/IP addressing. The network was recently migrated to Open Shortest Path First (OSPF) routing protocol, resulting in a much more scaleable and hierarchical topology and improved response time. This was a complex change with many components. All the routers in the network needed to be upgraded to a new version of software, and full memory upgrades were required to support the new technology.

Benefits: TCP/IP is a world wide industry standard network protocol which will provide uniform access to Commonwealth resources, as well as access to the Internet.

Contact: For TCP/IP addresses and access to MAGNet, or for specific TCP/IP implementation requirements, contact ITD's Communication Services Bureau at 617-973-0738.

Project: Communications Bridge (CommBridge)

Overview: CommBridge will provide a mechanism for applications to communicate with other agencies' applications in a consistent, standardized manner. It will enable real time queries and updates as well as data streaming. Backup and recovery, store and forward, security, auditing, and protocol conversion will also be provided. The core components of the Communications Bridge include: the MAGNet WAN, IBM's messaging and queuing middleware product MQSeries, shared distributed application services, and application-specific interface modules.

Status: The pilot project for CommBridge involves replacing existing tape transfers between DTA and DOR. The focus of the pilot is to establish links between agencies, provide strong and rigorous links, and build an infrastructure which will be a robust, scaleable, and extensible interoperability solution.

Benefits: All Commonwealth systems will be able to communicate with each other in a standardized fashion using standard interfaces, eliminating the need to write a custom interface for each system to be communicated with. Even when an existing application's architecture or platform changes, its interfaces will potentially be unaffected by the change.

Contact: Debbie Seaward, by phone at 617-973-0845 or email at Debbie.Seaward@state.ma.us ♦

IT Briefs

MGIC RESUMES MEETINGS

The Massachusetts Geographic Information Council resumed a schedule of meetings with a session early in January, 1997, covering an overview of GIS activity in Massachusetts. The panel of speakers represented Federal, state, regional and municipal government, as well as higher education and the private sector. This very successful session was followed with a February meeting on TIGER and Census data with presenters from the same range of entities.

Future meetings will be held on the first Tuesday of each month. MGIC meetings are open to all interested parties, whether currently using GIS or contemplating GIS usage. For more information on MGIC and the user meetings, contact Carl Nysten of MassGIS at (617) 727-5227 x323 or cnylen@state.ma.us. To get on the MGIC mailing list, contact Elaine Socha of ITD at (617) 973-0865 or Elaine.Socha@state.ma.us.

ITD's COMMUNICATIONS SERVICES BUREAU ADOPTS NEW APPROACH

The mission of the Information Services (IS) within ITD's Communications Services Bureau (CSB) is to enable Commonwealth Agencies to focus on their primary function by providing a single point of contact to a knowledge base and expertise in communications technology within CSB. To accomplish this, IS has established a team approach to handling requests for service from state government agencies. What this approach means in practice is that when an agency calls requesting service, the IS team explores the ramifications of the request by phone and then schedules a meeting with the agency that includes all relevant experts from the CSB staff.

CSB services include network connectivity, video conferencing and consulting services, as well as technical and billing assistance and support regarding data and telecommunications. CSB can be reached by phone at 617-973-0738; by fax at 617-727-1509; by WAN e-mail at CSBSUPPORT@CSB@ITD.BOS; and by Internet e-mail at CSBSUPPORT@STATE.MA.US.

GIS DAY AT THE STATE HOUSE

More than 250 people, including many Massachusetts legislators, participated in GIS Day at the State House on February 12, 1997. This event was sponsored by the Massachusetts Audubon Society and the Massachusetts Association of Regional Planning Agencies. The afternoon event included introductory remarks, a panel discussion, and GIS exhibits by local, regional and state government. Speakers included representatives from state, regional and local government, and from higher education and the private sector. This event was coordinated with the filing of a bill in the Massachusetts Legislature by Senator Lois Pines and Representative Douglas Petersen. This bill proposes to coordinate and streamline the participation of federal, state, regional and municipal agencies in a statewide institution utilizing Geographic Information Systems.

NEW DRIVER'S MANUAL UNVEILED ON THE INTERNET

Current and future Massachusetts motorists have a new tool to make them better drivers. The Registry of Motor Vehicles unveiled in January, 1997, the new Driver's Manual for passenger vehicle and motorcycle operators, becoming the second RMV in the country to offer its driver's manual on the Internet. The manual is the most comprehensive document on the rules of the road and safe driving skills in the state's history. It is more than a study guide for future drivers. It is a useful resource for all drivers who desire to improve their driving knowledge and skills.

Check it out at <http://www.state.ma.us/RMV>. The manual is also available at all RMV locations throughout the state, and it can be requested by phone at 617-351-4500 or 800-858-3926 (from 508 and 413 area codes only) to receive the manual by mail. ♦

INFORMATION TECHNOLOGY DIVISION

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The *Information Technology Bulletin* is a quarterly newsletter of ITD's Strategic Planning Group. One of SPC's tasks is to act as a clearinghouse for IT information. This publication furthers that goal. Please send correspondence to Managing Editor, Elaine Socha, the *Information Technology Bulletin*, Room 801, One Ashburton Place, Boston, MA 02108.

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Next publication: Summer 1997

A MESSAGE FROM THE CIO

Computer software and processing is pervasive in large modern enterprises, with the assumptions of prior designers embedded in date-handling logic for programs, networks, telephone systems, PCs, and even building control systems.

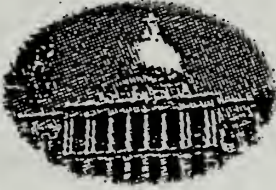
Every department should see it as both a technical and general management issue to insure that they can assure smooth operations as the department and its systems near 1999 and the year 2000.

This issue of the *Information Technology Bulletin* lists several resources that can be used to educate department staff on the nature of the challenge and how to meet it.

In general, a sensible and clear-headed approach will call for updating your department's inventory of critical systems (including PCs and phones), determining whether these systems were designed to handle dates beyond 1999, prioritizing any necessary changes, and insuring that any new systems procurements or development efforts are designed appropriately.

Please contact Marcia King on our staff with questions and comments regarding how the Information Technology Division can assist you in this effort. And assign a departmental representative to Marcia's Commonwealth Year 2000 Users' Group!

Sincerely,
T. Louis Gutierrez



Commonwealth of Massachusetts
Information Technology Division

Year 2000 Meeting the Challenge

April, 1997

T. Louis Gutierrez
Chief Information Officer

Year 2000 Challenge

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(Revised 4/30/97)

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1. Executive Summary

The Year 2000 Challenge is one all Commonwealth agencies face together. The goal of the Information Technology Division (ITD) is to foster awareness about the issue, provide coordination and support to agencies, and monitor and report on agency progress. This packet of information, as well as the Commonwealth's Year 2000 Web site (<http://www.eoaf.state.ma.us/y2k/index.stm>), are being offered to support agencies in their Year 2000 efforts.

At its most basic level, the Year 2000 challenge results from the fact that in the past 20 to 30 years, most computer systems have been designed so that date fields utilize two digits to designate the year. At the turn of the millennium, these systems will not be able to correctly interpret the year "00" unless they are redesigned to incorporate four-digit fields to designate the century.

What sounds like a relatively simple issue is converted to a "challenge" when one considers the number of lines of code that have to be reviewed to identify and correct the problem. The difficulty is compounded by the ubiquitous use of date fields in programs and databases and by the fact that these date fields are not always easily recognized as such. The Year 2000 date change is most likely to cause problems in the following areas: age determination, sorting by date, comparisons, century derivation, unique number generation, and leap year determination.

ITD is coordinating the Commonwealth Year 2000 project to get a more comprehensive assessment of the scope of work necessary to achieve compliance, to determine the level of resources that will be needed, and to provide support and coordination for agencies as they complete Year 2000 compliance tasks. The Commonwealth Year 2000 Action Plan consists of four major phases:

1. Awareness/High-Level Assessment
2. Agency Assessments and Plans
3. Conversion or Replacement
4. Validation

Agencies need to complete the Year 2000 Survey included in this packet in order to help provide information needed to complete the High-Level Assessment. By May 31, 1997, agencies are expected to have completed an inventory of all systems, developed a system portfolio, analyzed and prioritized the portfolio and completed their Year 2000 Assessments. Agency Year 2000 Plans are targeted for completion by July 31, 1997. Conversion or replacement activities will extend through the end of calendar year 1998. Validation activities must begin no later than the end of calendar year 1998.

This packet also contains Date Standards with which all agencies must comply in order to achieve a level of statewide consistency that ensures the interoperability of our systems both internally and externally. Contract guidance including sample language is also provided.

At the end of the packet are various Year 2000 Resources. The Operational Services Division describes its activities and time frames for ensuring Year 2000 compliance on the part of IT blanket contracts and vendors and provides a listing of vendors. A list of Year 2000 agency coordinators identified to date is provided to help foster cooperation and sharing of "lessons learned" between agencies. Information is also provided about User Group meetings, Web sites and conferences. The final item is a list of support services available from ITD's Strategic Planning Group throughout the life of the project.

The Year 2000 Challenge will involve the concerted efforts of managers, technical staff and users. Together we will identify and implement the re-tooling adjustments necessary to keep our IT resources working as intended into the next millennium.

2. Overview

The material in this packet has been prepared by the Information Technology Division (ITD) to assist departments in meeting the Year 2000 challenge. The role of ITD in this effort is to:

- foster awareness
- provide coordination and support
- monitor and report on progress.

Many Departments are aware of the issue and have begun taking action to bring their computer systems and applications into compliance while others may be just beginning to organize their effort. In any case, given that the deadline for this project is not negotiable, it is time to take stock of where we are, define the scope of the challenge on a statewide basis, insure that appropriate resources are made available for this effort, and implement the re-tooling adjustments necessary to keep our IT resources working as intended into the next millennium.

This booklet and its companion Web site (<http://www.eoaf.state.ma.us/y2k/index.stm>) provide background material as well as an action plan and timetable, survey and instructions, Commonwealth date standards and contract guidance, and various Year 2000 resources and contacts. The intended audience includes managers, technical staff and users. Each of these groups have a crucial role to play in both defining the scope of the challenge and implementing viable solutions.

The Issue

Much has been said lately in the technical and mainstream media about the coming Year 2000 deadline. It has been billed as the largest and costliest management challenge ever faced by the information technology industry. Global projections regarding the costs of bringing systems into compliance have been pegged as high as \$1.5 trillion. Why all the hype?

Over the last 20 to 30 years computer programs and systems have been designed to use six-digit date fields in which the last two digits designate the year. For example, "031497" is interpreted to mean "March 14, 1997." This has not presented any problems to date, but what happens when the date is January 1, 2000? Without a field to designate the century the year "00" cannot be interpreted correctly by the system (is it 1900 or 2000?) but it will also create problems for any program that uses dates to perform calculations such as age determinations and date-dependent fiscal projections. While this is a representation of the issue in its simplest form, there are other wrinkles which include:

- the use in some programs of the date 9/9/99 as a "dummy" placeholder to indicate an indeterminate termination or expiration date;
- the fact that the year 2000 is a leap year but some systems will not recognize it as such which will result in wrong day-of-the-week representations after February 29, 2000.

While the Year 2000 date change issue affects all organizations that use computer systems in the course of their business. This includes governments at all levels - local, state and federal - especially because of their dependence on many older systems which have been successfully operating with only minor modifications for 10 to 30 years.

The issue is also not just limited to mainframes, mid-range systems and PCs: PBX systems, Fax machines, VCRs, automated alarms, doors and elevators, to name a few obvious examples, may also be affected. The issue applies to all programming languages and operating systems as well as exec routines, macros, job control language, custom spreadsheets, personal database applications, ad-hoc queries and report requests.

2. Overview (continued)

The Challenge

A review of the literature and Web sites yields various explanations of the issues encompassed by the Year 2000 date change. Following is one of the best concise and straightforward descriptions we have come across. It is reproduced here (with a minimum of revisions) with the permission of its author John Douglas, Interim Executive Director of the State of Florida Information Resource Commission.

Date is the most common field used in computer software programs and databases. It can also be found in operating systems, reports, screens, and files. No computer language or computer hardware platform is exempt.

Simply finding all the date fields is a big problem. Not only are they in files and database fields, but they can be "hard-coded" into software programs. Additionally, not all date fields have the word "date" in their name. For example, a data field that is a date may be called "inspected", "case opened", "awarded", or "approved".

Another unique aspect of the Year 2000 century change is that it affects every organization that uses computer data and shares data with other organizations. Today, data is shared between many organizations on a daily basis. The State shares data with federal government agencies, local governments, and private vendors. We are all trying to repair this problem at the same time. How the system repairs are made by each of these different entities could affect whether the data can effectively be "read" from one organization's system to the next. This presents a management and coordination challenge that could prove daunting for many organizations.

In terms of the year 2000 date change and its impact on systems, it is most likely to cause failures in the following six principal areas:

1. Age determination

Systems are commonly designed to determine ages. For example, a system may calculate the age of a citizen in order to assess eligibility for certain benefits. Other systems may calculate the age of an outstanding debt in order to determine interest or to produce a bad debt report. Commonly, a system will derive age by subtracting the date of creation from the current date. For example, if you were born in 1935, your age would be calculated as 2000 minus 1935, which equals 65. This works very well with computer programs that store years in four-digit date fields.

Unfortunately, this doesn't work for computer programs that store year in two-digit date fields. Usually programs use date fields based on the last two digits of the year only. So far, programs written in this way have performed their tasks satisfactorily. A calculation that subtracts 35 from 96, for example, results in the correct answer of 61. However, in less than three years we can expect failures from programs using two-digit year fields. What will happen when, in trying to calculate your age, an employee-benefits program subtracts 35 from 00 and determines that your age is "negative 35?" What benefits will it pay if, like many systems, the program assumes that the result must be a positive number and pays you based on an age of 35 instead of 65?

2. Sorting by date

A fundamental function of most business applications is sorting. This process is used to organize information in useful sequences or to group similar data together for processing. Consider, for example, a system that tracks a company's stock performance by month. The program sorts the daily closing price of the stock and determines the high and low prices in each month. If the program sorts using a four-digit year field, it should continue to perform its function properly beyond the turn of the millennium.

If, however, it uses only a two-digit year field, users will suddenly start receiving reports in which year 2000 data precedes the data from the 1990s. Worse still, depending on the design of the program, the data for 1998 may be labeled as data for the year 2000, and vice-versa. Such a misleading report would obviously confound investment decisions.

2. Overview (continued)

In a similar vein, but often more difficult to identify, are programs that sort records based on date and then make selections by assuming that the most recent records are at the top or bottom. Starting in the year 2000, programs that are based on two-digit year fields will likely treat data from the 1990s as the most recent instead of the data from the 2000s.

3. Comparison

In addition to the processes of age determination and sorting, computer programs frequently make decisions based on the comparison of two dates. For example, a system may compare the dates of two outstanding loans in order to apply a payment to the older loan. When we reach January 1, 2000, the program, if it uses only the last two digits of the year, will begin to apply the payments to the most recent loans and will ignore those that originated in the 1900s.

4. Century Derivation

Some software developers have recognized that their two-digit year fields will cause problems when the year 2000 arrives. In an attempt to delay the problem, they have selected an arbitrary cut-off year after which all dates are assumed to be in the 1900s. For example, if the designer chose the number 20, the system would assume all years with values less than 20 to fall between 2000 and 2019 and all years equal to or greater than 20 to fall between 1920 and 1999.

Where designers have taken this approach, called century derivation, they have often been forced to pick a fairly low number. This means that while we can expect a very large number of problems as we reach the year 2000, we must also anticipate a continuing flow of such problems for 10, 20, or 30 years into the next century.

It is worth noting that systems which support birth dates back to the nineteenth century are not often susceptible to year 2000 problems since many of their designers have already addressed the key century-conversion issues.

5. Unique number generation

Many systems generate internal keys to uniquely identify data entities. The keys are required when the information provided by a user is insufficient to uniquely identify an item. For example, a system that uses only customer numbers, parts numbers, and quantities to identify an order, would not be able to detect the order when a customer ordered the same quantity of the same item a second time. An internal key enables the system to identify each order separately.

There are many techniques for generating these internal keys and most of these techniques can be expected to operate satisfactorily into the next century. However, one common method is based on manipulating the current date and time. Systems using this method may begin to generate duplicate internal identifiers when the year converts from 1999 to 2000.

The results of this are unpredictable and will depend on the specifics of the software. Some systems may destroy historical information by overwriting it with new data. Other systems may prevent users from entering the new information. In many cases, the problems may not be apparent for months or even years after January 1, 2000.

6. Leap years

To process dates correctly, computer programs frequently need to determine if a particular year is a leap year. The normal way to do this is to take the year and divide it by four. If the remainder is zero, then the year is treated as a leap year. This is a good approximation but not a precise determination. The leap year rule is as follows: if the year is divisible by four, it is a leap year; except every 100th year, which is not a leap year; except every 400th year, which is a leap year. Thus, the year 2000 is a leap year even though it is divisible by 100.

Some programs recognize that years divisible by 100 are not leap years but do not include the exception processing for the years that are divisible by 400. Such programs would believe that there are only 28 days in February of the year 2000 and would perform their processing accordingly.

2. Overview (continued)

The Approach

While the issues involved in the Year 2000 date change are fairly clear, the scope of the challenge is not as clear. As was mentioned previously, many agencies are well underway in their planning and implementation efforts. The current issue of the Information Technology Bulletin spotlights some of these efforts (website: <http://state.ma.us/itd/bulletin>).

ITD is launching the Massachusetts Year 2000 Project to get a more comprehensive assessment of the scope of work necessary to achieve compliance, to determine the level of resources that will be needed, and to provide support and coordination for agencies as they complete Year 2000 compliance tasks. The following section, Commonwealth Action Plan, outlines action items and target completion dates for the Project. Completion of the action items within the target deadlines is essential to meet our collective goal.

The Lessons Learned

As Commonwealth agencies continue or begin their Year 2000 compliance efforts, it may be useful to periodically review the experiences of those states which have begun implementation. The Massachusetts Year 2000 Project Web site provides links to other states' Year 2000 Web sites as well as the Federal Government's. Following is an abbreviated list of issues to watch for, as identified by the State of Florida in their first assessment report:

- Insufficient internal state resources to assure that critical systems will be corrected on time resulting in the need to contract for services.
- Some systems are likely to experience problems before the turn of the century (e.g., licensing and forecasting systems).
- Companies selling Year 2000 software tools may create a false sense of security with inflated claims of their tools' capabilities that constitute a "magic wand" or "silver bullet" for the Year 2000 problem. The pursuit of these magic solutions diverts attention from other solutions that would be more effective.
- Legislative changes during the next two years will likely require systems changes concurrent with efforts to make year 2000 corrections. Depending upon the scope of the changes on individual systems, they could result in the extension of the year 2000 project timeline past an acceptable point.
- Many agencies tend to focus their plans on mainframe, centralized data processing. While this is where the bulk of the year 2000 date change issues will exist, there may very well be substantial impacts to the distributed computing systems operating within the State, including personal computers and file servers.
- User support should receive greater attention. There are many small applications generated by non-information systems staff using packaged software that should be evaluated for potential problems.
- Shared data issues should receive greater attention. While it is understandable that internal systems would receive top priority, problems with non-compliant data or data received by the agency with date field based on different standards could have significant impacts for the agencies and should be addressed as soon as possible.
- Some agencies have made assumptions about their systems being compliant without actually testing the systems. Because of the pervasiveness of this problem in almost all systems, it is nearly impossible to be assured of compliance without thorough and rigorous testing. Systems testing is considered by some to require 30-40% the project's effort.

3. Commonwealth Action Plan

The Commonwealth Year 2000 Action Plan consists of four major phases:

1. Awareness/High-Level Assessment
2. Agency Assessments and Plans
3. Conversion or Replacement
4. Validation

Following is a Critical Timeline Overview chart which outlines activities for each phase and identifies completion dates. The first phase consists of activities which have been mostly completed by ITD and other oversight agencies. The other phases encompass activities which are the primary responsibility of individual agencies. ITD will provide guidance and support to agencies throughout these phases of the Action Plan.

The following guidelines for conducting Agency Assessments and Plans are offered to assist agencies with Phase 2.

AGENCY ASSESSMENT AND PLAN GUIDELINES

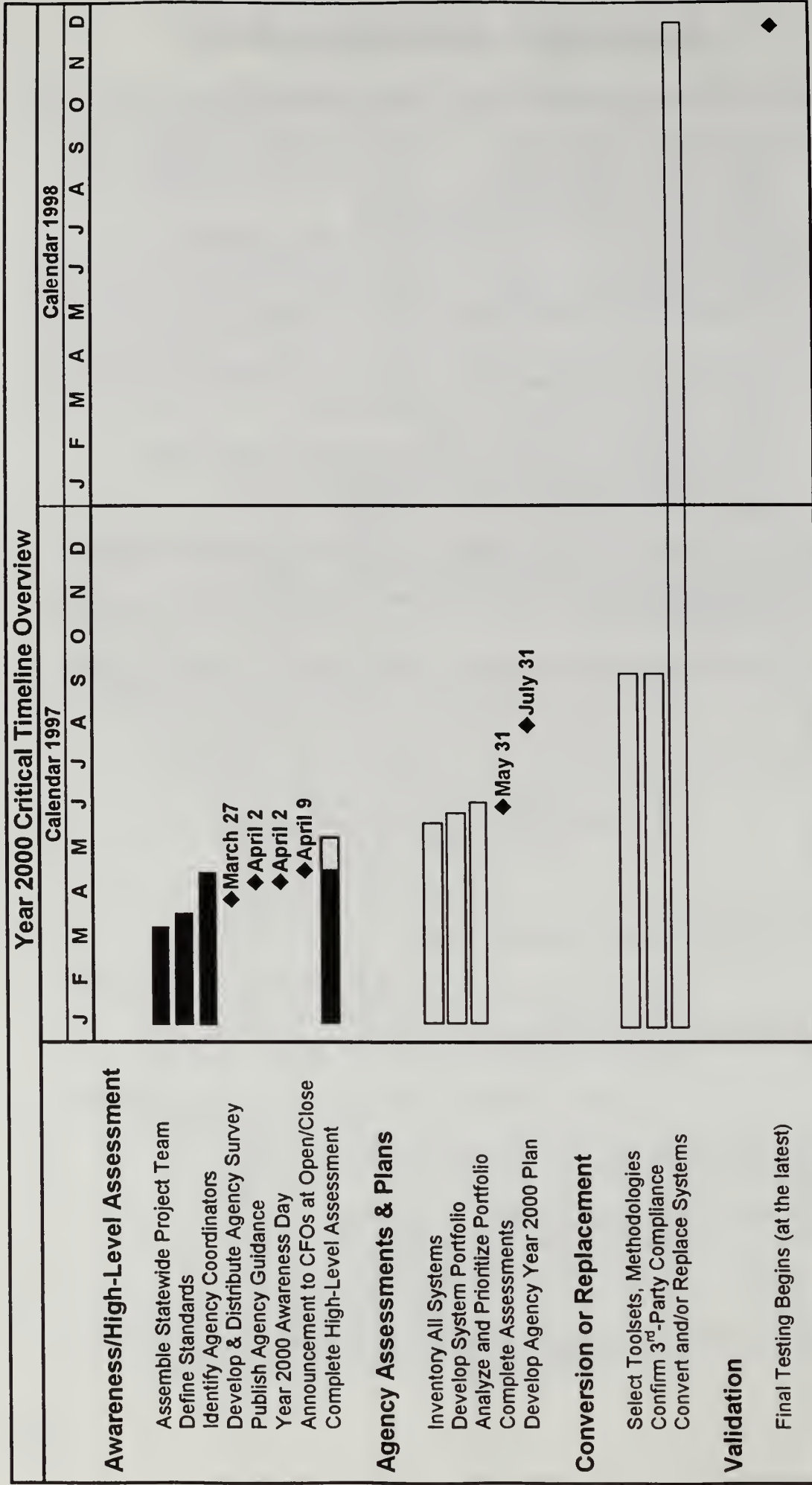
1. Identify core business areas and processes and assess the potential impact of year 2000-induced failures for each area and process
2. Assess the severity of the impact of potential year 2000-induced failures for each core business area and associated processes
3. Conduct a comprehensive enterprise-wide inventory of all information systems and develop comprehensive system portfolio:
 - Identify components and interfaces for each system
 - Integrate into an agency comprehensive system portfolio (automated if possible) which identifies for each system:
 - links to core business areas or processes
 - platforms, languages, database management systems
 - operating system software and utilities
 - telecommunications
 - internal and external interfaces
 - owners
 - the availability and adequacy of source code and associated documentation
4. Analyze system portfolio and identify:
 - non-repairable items (lack of source code or documentation)
 - conversion or replacement resources required for each platform, application, database management system, archive, utility or interface
5. Prioritize agency's system conversion and replacement program
 - rank by business impact:
 - priority 1 – systems that are so critical to the mission of the programs they support that those programs would cease to operate if the computer system fails
 - priority 2 – systems whose failure would severely hamper the mission of a program, but the program would continue to operate
 - priority 3 – systems whose failure would result in only a minor inconvenience for the program
 - ranking by anticipated failure date
 - identification of applications, databases, archives, and interfaces that cannot be converted because of resource and time constraints

3. Commonwealth Action Plan (continued)

6. Establish year 2000 project teams for business areas and major systems
7. Develop a year 2000 plan which includes:
 - schedules for all tasks and phases
 - master conversion and replacement schedule
 - assessment and selection of outsourcing options
 - assignment of conversion or replacement projects to project teams
 - risk assessment
 - contingency plans for all systems
 - validation/testing, transition and implementation strategies
8. Address interface and data exchange issues:
 - analyze dependencies on data provided by other organizations
 - contact all entities with whom agency exchanges data
 - identify the need for data bridges or filters
 - make contingency plans if no data can be received from external sources
 - make plans to determine that incoming data are valid
 - develop contingency plans to handle invalid data
9. Identify year 2000 vulnerable systems and processes outside the traditional information resource management area that may affect the agency's operations:
 - telecommunication systems, (e.g.-telephone & data networks switching equipment)
 - building infrastructure

(Source: U.S. General Accounting Office, Year 2000 Computing Crisis: An Assessment Guide, February 1997)

3. Commonwealth Action Plan (continued)



4. Survey

The Office of the State Auditor (OSA), with the collaboration of the Information Technology Division (ITD), has developed an agency survey to gather status information on agencies' Year 2000 activities. The survey form can be found in Appendix A of this document.

The intent of the survey is to determine the progress that has been made so far, define the scope of the challenge on a statewide basis and determine the resources and support that will be necessary to successfully complete conversion or replacement efforts. The survey results will be integrated into the high-level assessment which will be used to determine where support and assistance are needed.

Surveys must be completed by April 30, 1997 and forwarded to Robert Buchanan at the Office of the State Auditor. Questions and/or requests for assistance in completing the survey should be directed to Marcia King at 617-973-0711, or at [Marcia.King@Planning @ITD.BOS](mailto:Marcia.King@Planning@ITD.BOS) via the Wide Area Network or at Marcia.King@state.ma.us via the Internet.

5. Standards & Contract Guidance

Date Standards

The Massachusetts Government User Group has defined Year 2000 compliance thus: "Year 2000 compliant means information technology that accurately processes date/time data (including, but not limited to, calculating, comparing, and sequencing) from, into, and between the twentieth and twenty-first centuries, and the years 1999 and 2000 and leap year calculations. Furthermore, Year 2000 compliant information technology, when used in combination with other information technology, shall accurately process date/time data if the other information technology properly exchanges date/time data with it."

National and International standards organization such as NIST and ISO are recommending date standards that use a four-digit year where a two-digit century precedes, and is contiguous with, a two-digit year-of-century (e.g. 1999, 2000, etc.). The federal government has adopted this standard for the purposes of electronic data interchange in any recorded form among U.S. Government agencies. The Commonwealth of Massachusetts is also adopting this standard for the purpose of electronic data interchange among its agencies.

The international standard date notation is CCYY-MM-DD where CC=century, YY=year, MM=month and DD=day. This notation is becoming increasingly popular and is likely to become a de-facto standard. Commonwealth agencies are strongly advised to use this notation for date representation.

Sample Year 2000 RFR Language

OSD and ITD have jointly agreed on the definition for Year 2000 Compliance and language for use in RFRs. The Year 2000 issue must be considered in all procurements that include products, services and systems that use day/date data. Below is the RFR language for the Year 2000 issue for new procurements.

"The contractor represents and warrants that the information technology for this contract is year 2000 compliant. Year 2000 compliant means information technology that accurately processes date/time data (including, but not limited to, calculating, comparing, and sequencing) from, into, and between the twentieth and twenty-first centuries, and the years 1999 and 2000 and leap year calculations. Furthermore, Year 2000 compliant information technology, when used in combination with other information technology, shall accurately process date/time data if the other information technology properly exchanges date/time data with it. This warranty shall survive the expiration or termination of this contract. "

Contract Guidance Relating to Interfaced Systems

Agencies entering into contracts not involving the purchase of a product or service per se, but contracting to interface an existing system with the system of an outside entity, may wish to consider the following language:

"The contractor represents and warrants that this system and all interfaces to this system that the contract is providing, including but not limited to interfaces with other systems and data entry interface for this system, are year 2000 compliant. Year 2000 compliant means information technology that accurately processes date/time data (including, but not limited to, calculating, comparing, and sequencing) from, into, and between the twentieth and twenty-first centuries, and the years 1999 and 2000 and leap year calculations. Furthermore, Year 2000 compliant information technology, when used in combination with other information technology, shall accurately process date/time data if the other information technology properly exchanges date/time data with it. This warranty shall survive the expiration or termination of this contract. "

5. Standards & Contract Guidance (continued)

Additional Protections for Large Scale or Especially Important Systems

Some contracts may require additional clauses because the contract involves a higher risk of loss for the Commonwealth if the underlying system is not year 2000 compliant. For instance, an agency entering into contracts for mission critical systems, date sensitive applications or large scale deployments, may wish to include additional contract language that requires testing to prove year 2000 compliance prior to acceptance. This language should be closely tailored to the specific contract. It may also be necessary to include language in these types of contracts that requires proof of insurance or some other guarantee, such as performance bonds, in the event of Commonwealth losses due to non-compliance.

6A. OSD's IT Blanket Contracts & Vendors

Year 2000 Activity for Statewide Contracts

OSD is proceeding with efforts so that all IT contracts will be Year 2000 compliant. The new PBX contract has compliance provisions, and all other contracts will have these provisions in the future. All new statewide contracts from this date forward will have requirements for year 2000 compliance for all products, services and systems. Existing contracts will be amended at renewal time. Until then, ordering departments need to specify the year 2000 compliance requirement with all orders and requests for quotes.

See Section 4., Standards & Contract Guidance, for the definition of Year 2000 compliance and for suggested RFR and contract language regarding Year 2000 compliance.

IT Contract For PC and Network Hardware, Software, Maintenance and Integrator Services - N6922, BT6H03P, BT6L41P

The Statewide PC Contract provides PC and network hardware, software, maintenance and integrator services.

In order to assure effective Year 2000 compliance and to understand the magnitude of the problem, all Vendors on this contract will be sent a survey requiring that they indicate which products and services are Year 2000 compliant. All Vendors will be required to return the survey information to the IT Desktop Procurement Management Team for analysis and review. The PC Contract does not expire until 6/30/98. However, it will be expressed, in the strongest terms, that the Commonwealth will be making purchases from Year 2000 compliant Vendors only. All Vendors who agree, in writing, that they will be in compliance will be recommended. This recommendation will be posted and made available to all Departments and Commonwealth entities.

Activity

- Issue letter and survey to PC Vendors
- PC response to survey material and compliance agreement
- Evaluation and analysis of responses
- Post list of Vendors in compliance (Web-site and by letter)
- Compliance Amendment

Target Date

completed
May 25, 1997
May 26 - Jun 9, 1997
June 23, 1997
July 23, 1998

IT Consultant Services Contract - BT6H03S

The Statewide Information Technology Consultant Services Contract provides for Systems and Applications services. There are 73 Vendors on this contract who provide a broad range of consulting services.

To assure Year 2000 compliance and to understand the magnitude of the problem, all Vendors on the Consultant Services Contract will be sent a survey requiring that they identify work that has been completed for the Commonwealth and whether any Applications or Systems development is Year 2000 compliant. The requirements for processing the surveys and for the resulting recommendations are the same as for the Statewide PC Contract as described above. Additionally, all Consultant Services Vendors will be asked if they have direct experience in evaluating, identifying and correcting Year 2000 issues. The goal will be to build a base of Vendors from which Departments can select Vendors to assist with Year 2000 issues. This list of Vendors will also be published.

6A. OSD's IT Blanket Contracts & Vendors (continued)

Activity	Target Date
• Issue letter and survey to Vendors	completed
• Response to survey material and compliance agreement	May 25, 1997
• Evaluation and analysis of responses	May 26 - Jun 9, 1997
• Post list of Vendors in compliance (Web-site and by letter)	June 23, 1997
• Post list of Vendors with experience in the correction and identification of Year 2000 problems (Web-site and by letter)	June 23, 1997
• Compliance Amendment	July 23, 1997

IT Mid-Range Systems And Services Contract - N3922, BT4H03X, BT4L41X

The Mid-Range Systems and Services contract provides Mid-Range hardware, software, systems, and consulting services.

The Mid-Range and Large Systems Procurement Management Team (PMT) is conducting a review of the impact on the Year 2000 transition to the next millennium and the process by which the PMT will work with the Mid Range vendors to ensure compliance. All vendors that are identified in this Mid-Range listing have contracts that are scheduled to expire on August 20, 1997. The PMT has decided that a vendor's compliance with Year 2000 is so critical that the Commonwealth is making Year 2000 compliance a condition for offering an extension (August 21, 1997 through August 20, 1998) on the state-wide contract.

The PMT has received information from several vendors under contract to the Commonwealth. However, given the importance of the issues surrounding the Year 2000, the PMT is issuing a letter and survey for a Mid-Range Vendor's full product offerings. The PMT will indicate a vendor's positive or negative response to Year 2000 compliance, as well as a "non-response" to our inquiry. The following timetable outlines the PMT schedule for Year 2000 compliance for Mid-Range vendors:

Activity	Target Date
• Letter/Survey to Mid-Range vendors	completed
• Mid-Range vendor response	May 25, 1997
• Evaluation of vendor responses and clarification, if necessary	May 26 - Jun 9, 1997
• ITM issues extension notice to Year 2000 compliant vendors	June 23, 1997
• ITM posts a list of Year 2000 compliance vendors	June 23, 1997
• Compliance Amendment	September 23, 1997

Information Technology Statewide Contract Vendors

The following pages are listings of Information Technology Statewide Contract vendors by contract for the following contracts:

1. IT Contract For PC and Network Hardware, Software, Maintenance and Integrator Services - N6922, BT6H03P, BT6L41P
2. IT Consultant Services Contract - BT6H03S
3. IT Mid-Range Systems and Services Contracts N3922, BT4H03X, BT4L41X

6A. OSD's IT Blanket Contracts & Vendors (continued)

1. IT Contract For PC and Network Hardware, Software, Maintenance and Integrator Services - N6922, BT6H03P, BT6L41P - Vendor Listing

PC SOFTWARE CATEGORY:

MICROLAND

1026 Rockville Pike
Rockville, MD 20852
Contact: Mass. Sales Desk
Tel # 800-646-7844
Fax #: 301-738-9698
Vendor Code: 521-783-912-0009

COMPUCOM SYSTEMS, INC

4 California Ave.
Framingham, MA 01701
Contact Person: Steve Fay
Tel. # 508-875-2800 x7050
Fax # 508-651-1948
Vendor Code: 382-363-156-0005

TERMINAL EXCHANGE

163 Armory St.
Brookline, MA 02146
Contact Person: Richard Pomper
Tel. # 617-731-6319
Fax # 617-277-1984
Vendor Code: 042-838-551-0004

COMPUTER MARKETPLACE

885 Main Street
Tewksbury, MA 01876
Contact Person: Manny Spampinato
Tel. # 508-851-5317
Fax. # 508-851-5637
Vendor Code: 042-829-706-0007

PC MAINTENANCE CATEGORY:

EASTERN REGION:

PRAXIS GROUP

11 Ray Avenue
Burlington, MA 01803
Contact Person: Diane West
Tel. # 617-272-7100
Fax. # 617-272-0525
Vendor Code: 042-837-068-0001

DECISION ONE

321 Commonwealth Road
Wayland, MA 01778
Contact Person: Thomas Underhill
Tel. # 508-650-3715
Fax. # 508-650-6245
Vendor Code: 232-328-680-0000

BAYSTATE DATA SYSTEM

82 Myron St.
West Springfield, MA 01089
Contact Person: D. Bryan Mulvenna
Tel.# 800-365-1775
Fax # 413-734-2771
Vendor Code: 042-947-804-0004

CBE TECHNOLOGIES, INC.

50 Redfield Street
Boston, MA 02122
Contact Person: Warren Nelson
Tel.# 617-265-4000 ext. 230
Fax #: 617-265-2854
Vendor Code: 043-267-220-0005

PC MAINTENANCE CATEGORY:

WESTERN REGION:

BAYSTATE DATA SYSTEM

62 Myron St.
West Springfield, MA 01089
Contact Person: D. Bryan Mulvenna
Tel. # 800-365-1775
Fax. # Fax 413-734-2771
Vendor Code: 042-947-804-0004

CBE TECHNOLOGIES, INC.

50 Redfield Street
Boston, MA 02122
Contact Person: Warren Nelson
Tel. # 617-265-4000 ext. 230
Fax # 617-265-2854
Vendor Code: 043-267-220-000935

COMMODITY PC's AND PERIPHERALS CATEGORY:

CIC SYSTEMS

165 University Ave.
Westwood, MA 02090
Contact Person: Stuart Kaplan
Tel. #: 617-320-8300 ext.233
Fax #: 617-320-8327
Vendor Code: 650-350-400-0005

6A. OSD's IT Blanket Contracts & Vendors (continued)

PC and Network Hardware, Software and Services -- Vendor Listing (continued)

NETWORK INTEGRATOR CATEGORY:

BANYAN PREMIER

COMPUCOM SYSTEMS, INC.

4 California Avenue
Framingham, MA 01701
Contact Person: Steve Fay
Tel. #508-875-2800 x7050
Fax #508-651-1948
Vendor Code: 382-363-156-0000

AMERIDATA

30 Commerce Way
Woburn, MA 01801
Contact Person: Brian Parke
Tel. #617-939-1073
Fax #617-939-1056
Vendor Code: 410-997-685-0005

I-NET, Inc.

800 Technology Park Drive M/S 01N33A
Billerica, MA 01821-4130
Contact Person: Joe Aucoin
Tel. #508-967-2902
Fax #508-967-2975
Vendor Code: 521-408-890-0004

NETWORK INTEGRATOR CATEGORY:

NOVELL GOLD

The PRAXIS GROUP

11 Ray Ave.
Burlington, MA 01803
Contact Person: Diane West
Tel. # 617-272-7100
Fax # 617-272-0525
Vendor Code: 042-837-068-0001

VANSTAR

199 Wells Avenue
Newton, MA
Contact Person: Jim Solinas
Tel. # 617-796-7800
Fax # 617-796-7820
Vendor Code: 942-376-431-0005

RETROFIT INC.

455 Fortune Boulevard
Milford, MA 01757
Contact Person: Dave Rocco
Tel. # 508-478-2222 ext.240
Fax # 508-478-2040
Vendor Code: 042-799-238-0008

BANYAN MDSP

CHARTER SYSTEMS (New England Systems)

60 First Ave.
Waltham, MA 02154
Contact Person: Tod Foote
Tel. # 617-243-4573
Fax # 617-672-8484
Vendor Code: 042-931-741-0005

ENTEX (FCP)

725 Canton Street
Norwood, MA 02062
Contact Person: Steve Gately
Tel. #: 617-575-8262
Fax # 617-255-1590
Vendor Code: 133-715-291-0001

CHARTER SYSTEMS (N. E. SYSTEMS)

60 First Street
Waltham, MA 02154
Contact Person: Tod Foote
Tel. # 617-235-7051
Fax # 617-235-8012
Vendor Code: 042-931-741-0005

SIGMA TECH

477 CONCORD AVE.
CAMBRIDGE, MA 02138
Contact Person: Jeff Yang
Tel. # 617-354-8088
Fax # 617-491-1329
Vendor Code: 042-934-647-0000

I-NET, Inc.

600 Technology Park Drive M/S 01N33A
Billerica, MA 01821-4140
Contact Person: Joe Aucoin
Tel. # 508-967-2902
Fax # 508-067-2975
Vendor Code: 521-408-890-0004

6A. OSD's IT Blanket Contracts & Vendors (continued)

2. IT Consultant Services Contract - BT6H03S

Consultant Services Vendor Listing, Category 1 - Applications

Application Support Services include those activities related to the creation and maintenance of automated business processes which are developed to operate in specific technical environments or platforms. The focus of these activities is the business operations to be automated.

FIRST	LAST	VENDOR CODE	COMPANY	STREET	CITY	ST ZIP	TELEPHONE FAX
RICHARD	TEDESCHI	042-805-367-0008	ADEPT	888 WORCESTER RD	WELLESLEY	MA 02181	617-239-1700
DANIELLE E.	MCINNIS	540-856-778-0004	AMERICAN MANAGEMENT SYSTEMS INC	ONE BOWDOIN SQUARE	BOSTON	MA 02114-2919	617-854-2118 617 854 2043
FEMI	BJOMO	952-579-365-0009	ANALYSIS & TECHNOLOGY	258 BANK STREET	NEW LONDON	CT 06320	203-444-0827
GREG	KARLBERG	720-542-904-0007	ANDERSON CONSULTING	ONE INTERNATIONAL PLACE	BOSTON	MA 02110-2604	617-330-4000
LINDA	BISCHOFF	043-124-927-0009	APPLIED GEOGRAPHICS	100 FRANKLIN STREET	BOSTON	MA 02110	617-292-7125
JOHN	HALL	042-449-817-0000	ASEC	5 BURLINGTON WOODS STE 100	BURLINGTON	MA 01803	617-272-7910
JOHN	TOWNER	043-151-831-0004	BUSINESS PROCESSING TECHNOLOGIES	21 OLYMPIA AVENUE SUITE 501	WOBURN	MA 01801	617-935-7080
KAREN	COTTER	042-716-110-0009	C & C. DATA PROC. ASSOC.	107 GLENDALE RD	SHARON	MA 02067	508-535-7053
LARRY	AGRESTO	061-258-900-0001	C.W. COSTELLO & ASSOC.	35 WALNUT STREET SUITE 100	WELLESLEY HILLS	MA 02181	617-239-1414
BOB	MILLER	043-042-617-0005	CAMBRIDGE RESOURCE GROUP	150 GROSSMAN DR	BRAINTREE	MA 02184	617-849-7900
BRIAN	CASEY	521-111-874-0008	CENTECH	420 BEDFORD STREET SUITE 115	LEXINGTON	MA 02173	617-863-1966
TODD	FOOTE	042-931-741-0006	CHARTER SYSTEMS (N.E. SYSTEMS)	60 FIRST AVENUE	WALTHAM	MA 02154	617-672-8400
RAYMOND	RICHARD	050-431-089-0004	CITY/STATE COMPUTER SERVICES	100 FOUNTAIN STREET	PROVIDENCE	RI 02903	401-521-6400
CHAD	MAHER	931-004-490-0001	CLAREMONT TECH GROUP	600 SUPERIOR AVE BNK 1 CTR ST 1300	CLEVELAND	OH 44114	216-771-2771
TOM	MITNEY	061-135-009-0001	COMMAND SYSTEM	ONE APPLE HILL SUITE 316	NATICK	MA 01760	508-651-0530
MICHAEL	ANTHONY	043-140-893-0007	COMMONWEALTH TECHNOLOGY	254 COCHITUATE ROAD	FRAMINGHAM	MA 01701	617-237-4950
STEVE	FAY	382-363-156-0005	COMPU COM	4 CALIFORNIA AVE	FRAMINGHAM	MA 01701	508-875-2800
BRIAN	KELLER	020-354-937-0007	CONTRACT SOLUTIONS INC.	4 FANEUIL HALL MKTPLACE 4TH FLOOR	BOSTON	MA 02109	617-367-2990
TOM	COUGHLIN	135-218-870-0001	COOPERS & LYBRAND	144 MIDDLESEX TURNPIKE	BURLINGTON	MA 01803	617-229-1031
DOM	R.	042-768-822-0002	D.R. WHITE COMPUTER SERVICES	636 WASHINGTON STREET	CANTON	MA 02021	617-821-2290
ED	BARRY	043-156-261-0007	DATA BASE TECH	2 NEWTON EXECUTIVE PARK	NEWTON	MA 02162	617-964-1717
WENDY	GLASMAN	135-133-500-0014	DELOITTE & TOUCHE	125 SUMMER STREET	BOSTON	MA 02110	617-261-8509
BECCA	ESHELMAN	042-228-590-0005	DIGITAL EQUIPMENT CORP.	131 HARTWELL AVE	LEXINGTON	MA 02173	617-676-4435
JOHN	OSOWSKI	042-736-710-0005	DMR GROUP INC	404 WYMAN ST SUITE 450	WALTHAM	MA 0214	617-487-9000 617 487 5752
KATHY	TULPA	043-157-565-0008	EDP CONTRACT SERV	18 TREMONT STREET SUITE1100	BOSTON	MA 02108	617-723-6111
RONALD	TRUFFA	751-093-604-0008	EDS	155 FEDERAL STREET 5TH FLOOR	BOSTON	MA 02110	617-451-3703
JIM	MCNEIL	043-097-449-0000	ELIASSEN GROUP	591 NORTH AVE	WAKEFIELD	MA 01880	617-246-1600
STEVE	GATELY	133-715-291-0001	ENTEX	725 CANTON STREET	NORWOOD	MA 02062	617-575-8262
MELISSA	BOUDREAULT	043-091-689-0006	G I S TRANS	675 MASSACHUSETTS AVE	CAMBRIDGE	MA 02139	617-354-2771 EXTN: 133
BRIAN	BARTHELMES	130-871-985-0004	IBM CORP.	404 WYMAN ST	WALTHAM	MA 02154	617-895-2904
CHERYL	HINKLE	630-573-222-0001	INTERGRAPH	2051 MERCATOR DRIVE	RESTON	VA 22091	703-264-5600

6A. OSD's IT Blanket Contracts & Vendors (continued)

Consultant Services Vendor Listing, Category 1 - Applications (continued)

KIM	BADDOUR	042-729-042-0001	INTERLEAF INC	62 FORTH AVE	WALTHAM	MA 02154	617-290-0710
WALTER	MEARES	042-448-936-0009	INTERMETRICS INC	733 CONCORD AVE	CAMBRIDGE	MA 02138	617-661-1840
SHAWN	WARREN	135-565-207-0007	KPMG PEAT MARWICK LLP	99 HIGH STREET	BOSTON	MA 02110	617-988-1668
DON	PESCINE	141-625-106-0008	LENCO COMPUTER CONSULTING	ONE CRANBERRY HILL	LEXINGTON	MA 02173	617-674-1010
ALLEN	BILL	541-323-531-0008	MADEN TECH CONSULTING	209 BURLINGTON ROAD	BEDFORD	MA 01730	617-275-5900
KEVIN	DORNEY	541-000-588-0001	MAXIMUS	36 WASHINGTON ST SUITE 320	WELLESLEY	MA 02181	617-431-2212
ROBERT	MORE	043-141-660-0008	MEHTA CORP	260 BEAR HILL RD SUITE 302	WALTHAM	MA 02154	617-684-8330
MICHAEL	ANTHONY	042-805-854-0005	MICHAEL ANTHONY ASSOC.	42 WASHINGTON ST SUITE 301	WELLESLEY	MA 02181 1803	617-237-4950
BASU		043-073-344-0005	MOSAIC DATA SYSTEM	19 CROSBY DR.	BEDFORD	MA 01730	617-275-4920
KENNETH	KIRSH	050-366-090-0006	NETWORK SIX	475 KILVERT STREET	WARWICK	RI 02886	401-732-9000
PETER	MARAVELIAS	043-201-585-0008	NOBLE SOFTWARE SOLUTIONS	CTA BLDG 175 MIDDLESEX TPK	BEDFORD	MA 01730	617-271-9259
DICK	DAVIS	222-410-115-0006	PERFORMANCE DEVELOPMENT CORP.	22062 CARBON MESA ROAD	MALIBU	CA 90265	310-456-6301
TRISHA	MITKUS	231-690-418-0003	PINKERTON	9 BELLEAU WOODS #100	GEORGETOWN	MA 01833	508-352-7573
CHARLES E.	BASCOM	043-048-998-0007	QUADRANT CORP	340 FRONT STREET / PO BOX 299	MARION	MA 02738	508-748-1283
JOHN	GIATRELLIS	043-130-648-0007	SAPIENT	1 MEMORIAL DRIVE	CAMBRIDGE	MA 02142	617-621-0200
STEVE	SYMES	953-630-868-0002	SCIENCE APPLICATION INTL CORP	261 CEDAR HILL STREET BLDG. C	MARLBORO	MA 01752	508-460-9500
STEPHEN	ALPERT	043-298-137-0004	SDI/ SYSTEMS DEVELOPMENT INC.	50 OTIS HILL ROAD	NORWELL	MA 02061	617-659-2072
JOE	LALLY	540-943-991-0007	SOFTWARE AG	100 GRANDVIEW RD SUITE 210	BRAINTREE	MA 02184	617-356-1031
DAVID	DENTON	043-169-053-0008	SOURCE ONE SOLUTION	45 ACCORD PARK DRIVE	NORWELL	MA 02061	617-871-4211
BERNIE	LAVOY	042-770-369-0002	SUMARIA SYSTEMS INC	18 LAKESIDE OFFICE PARK	WAKEFIELD	MA 01880	617-245-9810
JOSEPH	WALSH	942-951-005-0001	SYBASE, INC.	101 HUNTINGTON AVE. 22ND FLOOR	BOSTON	MA 02199	617-422-7160
MARK	CHANDLER	042-830-849-0009	SYNETICS CORP.	540 EDGEWATER DRIVE	WAKEFIELD	MA 01880	617-245-1312
ED	ANDERSON	042-889-762-0006	SYSTEM RESOURCES CORP.	128 WHEELER ROAD	BURLINGTON	MA 01803	617-270-9228
ALAN	DAY	042-778-478-0001	SYSTEMS ENGINEERING, INC	88 NORTH AVE	WESTON	MA 02193	617-736-9100
JEANNETT	LEE	521-542-248-0000	SYTEL INC.	6430 ROCKLEDGE DR STE 400	BETHESDA	MD 20817	301-530-1000
EILEEN	RONAYNE	042-980-671-0004	THE BSC GROUP	P.O. BOX 9109	BOSTON	MA 02112-9109	617-345-4020
JIM	FINK	043-152-406-0001	THE CLARITY GROUP INC.	1538 TURNPIKE ST SUITE 201	NORTH ANDOVER	MA 01845	508-685-6100
PAUL	GRIGORIEFF	042-837-068-0001	THE PRAXIS GROUP	11 RAY AVENUE	BURLINGTON	MA 01803	617-272-7100
JOE	FLANNERY	042-970-563-0003	THE REGISTRY INC	189 WELLS AVE.	NEWTON	MA 02159	617-527-6886
Y.	ANBARASAN	222-504-605-0001	UII CORP	314 COMMON WAY	PRINCETON	NJ 08540	609-924-3200
PENNY	AMOROSO	050-248-052-0004	UNICOM	297 ELMWOOD AVE	PROVIDENCE	RI 02907	800-556-2828
LAURA	HARRIMAN	380-387-840-0077	UNISYS CORP	3 BURLINGTON WOODS DR.	BURLINGTON	MA 01803	617-238-1428
THOMAS	HARPER	541-498-081-0001	UNIVERSAL SYSTEMS INC.	14585 AVION PARKWAY	CHANTILLY	VA 22021	703-222-2840
BRIAN	HAWTHORNE	043-302-156-0000	UTOPIA INC	200 FIFTH AVENUE	WALTHAM	MA 02154	617-768-5500
CAROLYNN	GRADY	042-767-550-0006	W.T CHEN	1000 WINTER ST SUITE 2150	WALTHAM	MA 02154	617-890-8888

6A. OSD's IT Blanket Contracts & Vendors (continued)

Consultant Services Vendor Listing, Category 1 - Applications (continued)

JAN	DEPAULO	042-192-707-0001	WANG LABS	600 TECHNOLOGY PARK DRIVE	BILLERICA	MA	01821-4130	508-967-5187	
MAUREEN	BARRY	043-042-600-0002	WATERFIELD TECHNOLOGY GROUP	430 BEDFORD STREET	LEXINGTON	MA	02173	617-863-8400	
JOHN	CERRI	043-155-904-0003	WHITRIDGE ASSOC. INC.	744 EAST SQUANTUM STREET	QUINCY	MA	02171	617 472 2292	617 773 5521
RICK	ZANIBONI	113-298-544-0007	ZETITECH	1 MONTVALE AVE	STONEHAM	MA	02180	508-438-9099	

Consultant Services Vendor Listing, Category 2 - Systems

Systems Support Services include those activities related to the creation and maintenance of operating systems, networking software, and other technical products that comprise the technical environment or platform required for the operation of business application software. The focus of these activities is in operating systems or network communication systems as the interface to applications software.

FIRST	LAST	VENDOR CODE	COMPANY	STREET	CITY	STATE	ZIP	TELEPHONE	FAX
RICHARD	TEDESCHI	042-805-367-0008	ADEPT	888 WORCESTER RD	WELLESLEY	MA	02181	617-239-1700	
BARBARA	MEADE	941-728-548-0001	AMDAHL CORP	85 CHALLENGER RD	RIDGEFIELD PARK	NJ	07660	201-229-4446	
DANIELLE E.	MCINNIS	540-856-778-0004	AMERICAN MANAGEMENT SYSTEMS INC	ONE BOWDOIN SQUARE	BOSTON	MA	02114-2919	617-854-2118	617 854 2043
FEM	BUOMO	952-579-365-0009	ANALYSIS & TECHNOLOGY	258 BANK STREET	NEW LONDON	CT	06320	203-444-0827	
GREG	KARLBERG	720-542-904-0007	ANDERSON CONSULTING	ONE INTERNATIONAL PLACE	BOSTON	MA	02110-2604	617-330-4000	
LINDA	BISCHOFF	043-124-927-0009	APPLIED GEOGRAPHICS	33 BROAD STREET	BOSTON	MA	02109	617-367-8626	
JOHN	HALL	042-449-817-0000	ASEC	5 BURLINGTON WOODS STE 100	BURLINGTON	MA	01803	617-272-7910	
KAREN	COTTER	042-716-110-0009	C & C. DATA PROC. ASSOC.	107 GLENDALE RD	SHARON	MA	02067	508-535-7053	
TRISHA	BEATINI	061-258-900-0001	C.W. COSTELLO & ASSOC.	ONE DAVOL SQUARE	PROVIDENCE	RI	02903	401-273-3471	
BOB	MILLER	043-042-617-0005	CAMBRIDGE RESOUC E GROUP	150 GROSSMAN DR	BRAINTREE	MA	02184	617-849-7900	
BRIAN	CASEY	521-111-874-0008	CENTECH	8 PIER MARKETPLACE	NARRAGANSETT	RI	02882	617-863-1966	
TODD	FOOTE	042-931-741-0006	CHARTER SYSTEMS (N.E. SYSTEMS)	60 FIRST AVENUE	WALTHAM	MA	02154	617-672-8400	
CHAD	MAHER	931-004-490-0001	CLAREMONT TECH GROUP	600 SUPERIOR AVE BNK 1 CTR ST 1300	CLEVELAND	OH	44114	216-771-2771	
TOM	MITNEY	061-135-009-0001	COMMAND SYSTEM	ONE APPLE HILL SUITE 316	NATICK	MA	01760	508-651-0530	
MICHAEL	ANTHONY	043-140-893-0007	COMMONWEALTH TECHNOLOGY	254 COCHITUATE ROAD	FRAMINGHAM	MA	01701	617-237-4950	
BOB	DeFRANCISCO	042-983-272-0000	COMMUNICATION ANALYSIS	73 LEXINGTON STREET	NEWTON	MA	02166	617-244-3636	EXTN: 100
STEVE	FAY	382-363-156-0005	COMPUP COM	4 CALIFORNIA AVE	FRAMINGHAM	MA	01701	508-875-2800	
PATRICK	C. CONNOLLY	043-126-960-0001	CONNOLLY INFORMATION SERVICES INC.	200 MARKET ST. BLDG 18 SUITE 3 1A	LOWELL	MA	01852	508-454-4440	
BRIAN	KELLER	020-354-937-0007	CONTRACT SOLUTIONS INC.	4 FANEUIL HALL MKTPLACE 4 TH FLOOR	BOSTON	MA	02109	617-367-2990	
DOM	R.	042-768-822-0002	D.R. WHITE COMPUTER SERVICES	636 WASHINGTON STREET	CANTON	MA	02021	617-821-2290	
WENDY	GLASMAN	135-133-500-0014	DELOITTE & TOUCHE	125 SUMMER STREET	BOSTON	MA	02110	617-261-8509	
BECCA	ESHELMAN	042-226-590-0005	DIGITAL EQUIPMENT CORP.	131 HARTWELL AVE	LEXINGTON	MA	02173	617-676-4435	
KATHY	TULPA	043-157-565-0008	EDP CONTRACT SERV	18 TREMONT STREET SUITE1100	BOSTON	MA	02108	617-723-6111	

6A. OSD's IT Blanket Contracts & Vendors (continued)

Consultant Services Vendor Listing, Category 2 - Systems (continued)

JIM	MCNEIL	043-097-449-0000	ELIASSEN GROUP	591 NORTH AVE	WAKEFIELD	MA	01880	617-246-1600
CHRIS	ANASTOS	232-455-958-0004	FCP TECHNOLOGIES	1601 TRAPELO RD	WALTHAM	MA	02154	617-890-0884
BRIAN	BARTHELMES	130-871-985-0004	IBM CORP.	404 WYMAN ST	WALTHAM	MA	02154	617-895-2904
CHERYL	HINKLE	630-573-222-0001	INTERGRAPH	2051 MERCATOR DRIVE	RESTON	VA	22091	703-264-5600
WALTER	MEARES	042-448-936-0009	INTERMETRICS INC	733 CONCORD AVE	CAMBRIDGE	MA	02138	617-661-1840
DON	PESCINE	141-625-106-0008	LENCO COMPUTER CONSULTING	ONE CRANBERRY HILL	LEXINGTON	MA	02173	617-674-1010
ALLEN	BILL	541-323-531-0008	MADEN TECH CONSULTING	209 BURLINGTON ROAD	BEDFORD	MA	01730	617-275-5900
ROBERT	MORE	043-141-660-0008	MEHTA CORP	260 BEAR HILL RD SUITE 302	WALTHAM	MA	02154	617-684-8330
MICHAEL	ANTHONY	042-805-854-0005	MICHAEL ANTHONY ASSOC.	42 WASHINGTON ST SUITE 301	WELLESLEY	MA	02181 1803	617-237-4950
FRED	ZAPPALA	043-173-444-0001	MODULAR	97 PIPER ROAD	ACTON	MA	01720	508-266-9700
BASU		043-023-344-0005	MOSAIC DATA SYSTEM	19 CROSBY DR.	BEDFORD	MA	01730	617-275-4920
KENNETH	KIRSH	050-366-090-0006	NETWORK SIX	475 KILVERT STREET	WARWICK	RI	02886	401-732-9000
PETER	MARAVELIAS	043-201-585-0008	NOBLE SOFTWARE SOLUTIONS	CTA BLDG 175 MIDDLESEX TPK	BEDFORD	MA	01730	617-271-9259
DICK	DAVIS	222-410-115-0006	PERFORMANCE DEVELOPMENT CORP.	22062 CARBON MESA ROAD	MALIBU	CA	90265	310-456-6301
TRISHA	MITKUS	231-690-418-0003	PINKERTON	9 BELLEAU WOODS #100	GEORGETOWN	MA	01833	508-352-7473
JOHN	GIATRELLIS	043-130-648-0007	SAPIENT	1 MEMORIAL DRIVE	CAMBRIDGE	MA	02142	617-621-0200
MARK	CHANDLER	953-630-868-0002	SCIENCE APPLICATION INTL CORP	540 EDGEWATER DRIVE	WAKEFIELD	MA	01840	617-245-1312
JOE	LALLY	540-943-991-0007	SOFTWARE AG	100 GRANDVIEW RD SUITE 210	BRAINTREE	MA	02184	617-356-1031
JOSEPH	WALSH	942-951-005-0001	SYBASE, INC.	101 HUNTINGTON AVE. 22ND FLOOR	BOSTON	MA	02199	617-422-7160
MARK	CHANDLER	042-830-849-0009	SYNETICS CORP.	540 EDGEWATER DRIVE	WAKEFIELD	MA	01880	617-245-9090
ED	ANDERSON	042-889-762-0006	SYSTEM RESOURCES CORP.	128 WHEELER ROAD	BURLINGTON	MA	01803	617-270-9228 EXTN: 120
ALAN	DAY	042-778-478-0001	SYSTEMS ENGINEERING, INC	88 NORTH AVE	WESTON	MA	02193	617-736-9100
JIM	FINK	043-152-406-0001	THE CLARITY GROUP INC.	1538 TURNPIKE ST SUITE 201	NORTH ANDOVER	MA	01845	508-685-6100
PAUL	GRIGORIEFF	042-837-068-0001	THE PRAXIS GROUP	11 RAY AVENUE	BURLINGTON	MA	01803	617-272-7100
JOE	FLANNERY	042-920-563-0003	THE REGISTRY INC	112 WATER ST	BOSTON	MA	02110	617-723-9119
Y.	ANBARASAN	222-504-605-0001	UII CORP	314 COMMON WAY	PRINCETON	NJ	08540	609-924-3200
PENNY	AMOROSO	050-248-052-0004	UNICOM	297 ELMWOOD AVE	PROVIDENCE	RI	02907	800-556-2828
LAURA	HARRIMAN	380-387-840-0077	UNISYS CORP	3 BURLINGTON WOODS DR.	BURLINGTON	MA	01803	617-238-1428
THOMAS	HARPER	541-498-081-0001	UNIVERSAL SYSTEMS INC.	14585 AVION PARKWAY	CHANTILLY	VA	22021	703-222-2840 703 222 7212
CAROLYN	GRADY	042-767-550-0006	W.T CHEN	1000 WINTER ST SUITE 2150	WALTHAM	MA	02154	617-890-8888
JAN	DEPAULO	042-192-707-0001	WANG LABS	600 TECHNOLOGY PARK DRIVE	BILLERICA	MA	01821-4130	508-967-5187
JOHN	CERRI	043-155-904-0003	WHITRIDGE ASSOC. INC.	744 EAST SQUANTUM STREET	QUINCY	MA	02171	617 472 2292 617 773 5521
RICK	ZANIBONI	113-298-544-0007	ZEITECH	1 MONTVALE AVE	STONEHAM	MA	02180	508-438-2099

6A. OSD's IT Blanket Contracts & Vendors (continued)

3. IT Mid-Range Systems and Services Contracts N3922, BT4H03X, BT4L41X

Vendor Listing

Price Agreement: N3922

Master Service Agreement (Consulting): BT4H03X

Master Service Agreement (Maintenance): BT4L41X

First	Last	Vendor Code	Company	Address	City	State	Zip Code	Phone	Fax	e-mail
John	Traynor	042226590 0005	Digital Equipment Corporation	62 Crescent Street	Plympton	MA	02367	617-585-3775	617-5851578	john.traynor@lex.mts.dec.com
Anita	Montoya	380387840 0077	Unisys Corporation	3 Burlington Woods Drive	Burlington	MA	01803	617-238-1445	617-238-1406	anitamon@unnn.unisys.com
Brian	Barthelmes	130871985 0004	IBM Corporation	404 Wyman Street	Waltham	MA	02254	617-895-2904	Same	bbarthelmes@vnet.ibm.com
Jan	DePaulo	042192707 0001	Wang Laboratories	600 Technology Park Drive	Billerica	MA	01821-4130	508-967-5187	508-967-3166	janice.depaulo@wang.com
David	Cassinelli	024482462 0004	Data General Corporation	Mail Stop 9S17 3400 Computer Drive	Westboro	MA	01580	508-898-7292	508-898-4329	david_cassinelli@dgc.ceo.dg.com
Paul	Grigorieff	042837068 0001	Praxis Group Inc.	11 Ray Avenue	Burlington	MA	01803	617-272-7100	617-272-0525	pgrig@prax.com
Ron	Bulger	042820350 0009	Future Now Inc.	313 Speen Street	Natick	MA	01760	617-487-7722 x109	N/A	N/A
Edward	Wickham	410962923 0005	Bull HN Information Systems	38 Life Street	Brighton	MA	02135	508-294-5164	N/A	N/A
Charles	Mitchell	310387920 0053	AT&T Global Solutions	PO Box 75245	Charlotte	NC	28275	617-558-2130	N/A	N/A
Richard	Ford	730726174 0005	Memorex Telex ¹	200 Lowder Drive	Westwood	MA	02090	617-461-8000	N/A	N/A

¹ Memorex Telex has declared Chapter 11

6B. Agency Year 2000 Coordinators List

Administration & Finance			Email Address
	Admin. Ag. for Dev. Disabilities		
	Exec. Office of Admin. & Finance		
Pat English	Admin. Law Appeal	727-7060	Pat English@users@ala
Marc DeFranciso	Appellate Tax Board	727-3100X125	Mark DeFranciso@users@atb
Dave Webster	Human Resources Dept.	727-3555 x453	Dave Webster@exec.dpa
Anthony Del Grasso	DOR	887-5355	
Susan Edmonds	Finegold Library	727-7456	Susan Edmonds@lib@osd
Lisa Lee	Group Ins Group	727-2310	Lisa Lee@admin@groupins2
Joe Champa	Teacher's Retire Board	727-3661	
	Public Employees Retirement Brd.		
Mike Dumont	Office on Disability	727-7440	Mike Dumont@users@oha
William Smith	OSD	727-7500x302	William Smith@mis@osd
Franklin Young	MCAD	727-3990 x264	
	Bureau of State Bldg.		
Tom Smith	Budget Bureau	727-2081 x418	Tom Smith@systems@fad
	Div. of Capital Planning		
Marcia King	Information Tech. Division	973-0711	Marcia King@planning@itd.bos
	Civil Service Comm.		
	Office of Dispute Resolution		
	Dept. of Veterans Service		
	Office of Affirmative Action		
	Office of Employee Relations		
	Disabled Persons Protection		
Health & Human Services			
Jack Hornfeldt	Exec. Office of HHS	727-7600 x202	Jack Hornfeldt@executive@eohhs
Sharon Wright	DMA		SWright@NT.DMA.state.ma.us
Patricia Wada	Dept. of Social Services	727-3171 x217	Patricia Wada@daf@dss.central
Lynne Mooney	DTA	348-8408	Lynne_Mooney@DTA.state.ma.us
Dan Walsh	Office of Children	727-8900 x116	Dan Walsh@fld_op_central@ofc
	Dept. of Youth Services		
Fred Koed	Office for Refugees & Imm.	727-7888 x310	MSM_Mail@ori.compaq.1@servers
	Dept. of Public Health		
Paul Staruski	Dept. Of Mental Health	727-5500 x270	Paul Staruski@ait@dmh
	Dept. of Mental Retardation		
	Comm. for the Deaf & Hearing		
	Chelsea Soldiers Home		
	Holyoke Soldiers Home		
William Downing	Mass. Rehabilitation Comm.	204-3735	William Downing@sys@mrc.compaq.1
	Comm. for the Blind		
Frank Melle	Dept. of Health Care Finance	451-5330x701	Frank Melle@itg@hcfp

6B. Agency Year 2000 Coordinators List (continued)

Elder Affairs

Tim Regan	EO Elder Affairs	727-7750 x505	Tim Regan@fiscal@eld
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Environmental Affairs

Jerry Nash	Dept. of Environmental Management Fish & Wildlife Envir. Law Enforce.	508-282-0308	Jerry Nash@dmf@fwe
Jim Kelly	Dept. of Environmental Protection MDC Low Level Radio. Waste Mgt. Bd. Dept. of Food & Agriculture State Reclamation Board	292-5839	Jim Kelly@mis@dep Boston
Bob Hester	Environmental Affairs	727-9800 X261	Bob Hester @mis@eoea
Val Casella	EOEA	727-5227 x302	Val Casella@data center@eoea

Transportation & Construction

Aeronautics Commission			
John Bliss	Central Transportation Planning	973-7692	
Bill O'Callaghan	Mass Highway	973-7692	Bill O'Callaghan@mis@dpw_bos
Linda March	EOTC	973-8165	
Dept. Public Works			

Public Safety

Craig Burlingame	Exec. Office of Public Safety	660-4600	www.state.ma.us/eops
Deborah Ryan	Architectural Access Board	727-0660	Deborah Ryan@users@aab
Roger Mascoll	Chief Medical Examiner	267-6767	Roger Mascoll@users.cme@eops
Robert Liberatore	Merit Rating Board	267-3636	Robert Liberatore@GW Proxy@RMV.mailgate
Sally Ann Sweeney	Parole Board	727-3271 x110	
David Lewis	Registry of Motor Vehicles	351-9809	David Lewis@users@RMVmail
Military Division			
State Police			
Dept. of Corrections			
Dept. of Fire Services			
Dept. of Public Safety			
Bill Perry	MEMA	508-820-2044	Bill Perry @systems@mema
Governor's Highway Safety Board			
Maureen Molloy	Bureau of Special Investigations	727-6950 x415	Maureen Molloy@users@bsi
Martin Censullo	CHSB	660-4600	
Sarah Charbonneau	Criminal Justice Training Council	727-7827 x116	Internet Address: Sarah@mcjtc.org
Phil Walton	Committee on Criminal Justice	727-6300x345	
Board of Bldg. Regulations			

6B. Agency Year 2000 Coordinators List (continued)

Consumer Affairs

John Shontell	Division of Consumer Affairs	727-1637X433	John Shontell@asu@sca
Teresa Sacco	Division of Insurance	521-7471	Teresa Sacco@mis@doi
Berbard Waxman	Division of Banks	727-3145x371	Bernard N. Waxman@sys@dob
	Dept. of Public Utilities		
	ABCC		
	Board of Registration in Medicine		
	Energy Facilities Siting Council		
	Division of Business Regulations		
	Cable TV Commission		
	State Racing Commission		
Timothy Healy	Division of Registration	727-3056	Timothy Healy@admin@reg
	Division of Standards		

Economic Development

Joe Galluccio	Directors office	727-8380	Joe Galluccio@users@sea
Bruce Stebbins	MOBD	727-3206	Bruce Stebbins@users@mobd
	Office of Minority Enterprises		
	Office of Science & Technology		
Kim Hartford	Office of Film	973-8812	Kim Hartford@users@mafilm
	SOMBA		
	Office of Inter. Trade		
Andrew Grossman	Div. of Energy Resources	727-4732	Andrew Grossman@fiscal@ene
	Office of Travel & Tourism		

Labor & Workforce Dev.

Ed Burke	DET	626-6661	
	Labor Relations Commission		
	Division of Workforce Development		
	Disability Comm. On Employment		
	Division of Labor Market Information		
	Division of Occupational Safety		
	Division of Apprenticeship		
	MassJOBS Council		
	Industrial Services Program		
	Board of Conciliation & Arbitration		
	Division of Industrial Accidents		
	Joint Labor Mgt. Committee		

6B. Agency Year 2000 Coordinators List (continued)

Housing & Comm. Dev.

John Kupchaunis	Housing & Comm. Dev.	727-7147 x228	John Kupchaunis@is@eocd
John Kupchaunis	Manufactured Homes Comm.	727-7147 x228	John Kupchaunis@is@eocd
John Kupchaunis	Comm. on Indian Affairs	727-7147 x228	John Kupchaunis@is@eocd
John Kupchaunis	Canadian French Cultural Comm.	727-7147 x228	John Kupchaunis@is@eocd

Independent Agencies

Susan Foss	Office of the State Comptroller Supreme Judicial Court	727-5000 x233	Susan Foss@bts@osc
Rich Duggan	Trial Courts Appeals Court Committee for Public Counsel MBTA State Ethics Commission Mass. Convention Center Mass. Health & Educational Fac.	742-8383	
Laurie Issac	Mass. Housing Finance Mass. Housing Partnership Fund Mass. Port Authority MWRA PRIM Board Water Pollution Abatement Trust Board of Library Commissioners Government Land Bank Mass. Ed. Financing Lottery Commission	854-1752	Internet:Lisaac@mhfa.com
Russ Grant	Mass. Turnpike	630-7412	
Margaret Muse	Campaign & Political Finance		
Peggy Sullivan	DA Association Home Mortgage Finance Agency Community Econ. Dev. Assit. Corp. Community Dev. Finance Corp.	723-0647	Peggy Sullivan@sys@da.wes.o1

6B. Agency Year 2000 Coordinators List (continued)

Constitutional Offices

Governor's Office

Lt. Governor's Office

Governor's Council

Paul Mandeville

Treasurer & Receiver General

367-3900

Judy Langone

Sec. of the Commonwealth

727-2600x11

Judy Langone@cur@sosensl

Mary Clare Querzoli

Attorney General

727-2200 x2014

John Beveridge

Auditor's Office

727-6200

John Beveridge@sao@state.ma.us

Inspector General

Great & General Court

House of Representatives

Senate

6C. Year 2000 User Group, Web Sites, & Conference

Massachusetts Government Year 2000 User Group

A Massachusetts Government User Group has been established. Monthly meetings are usually held on the first Tuesday of the month in Room 801, One Ashburton Place, Boston; the schedule of meeting dates appears below. For more information about this user group, call Marcia King (617) 973-0711.

May 13, 1997
June 3, 1997
July 1, 1997
August 12, 1997
September 2, 1997

October 14, 1997
November 4, 1997
December 2, 1997
January 6, 1998

Year 2000 Web Sites

Massachusetts

Exec. Office of Admin. & Finance
ITD Year 2000 site
Comptroller's Office
DOR's Division of Local Services
Operational Services Division

<http://www.EOAF.state.ma.us>
<http://www.eoaf.state.ma.us/y2k/index.stm>
<http://www.OSC.state.ma.us/2000/intro.htm>
<http://www.state.ma.us/dls>
<http://www.state.ma.us/osd/osd.htm>

Other States

Alaska	http://www.state.ak.us/local/akpages/ADMIN/info/yr2000.htm
California	http://www.Year2000.ca.gov
Florida	mail.irm.state.fl.us/yr2000.html
Indiana	http://www.ai.org/dpoc/
Minnesota	http://www.state.mn.us/ebranch/admin/ipo/2000/2000.html
Nebraska	http://www.das.state.ne.us/das_cdp/rfp/inet.htm
New York	http://www.irm.state.ny.us/yr2000/yr2000.htm
Oregon	http://www.state.or.us/IRMD/y2k/year2k.htm
Pennsylvania	http://www.state.pa.us/Technology_Initiatives/Year2000
Texas	http://www.state.tx.us/standards.html
Virginia	http://www.cim.state.va.us/cdc/index.html
Washington	http://www.wa.gov/dis/2000/y2000.htm

Other Organizations

Official Y2K Website	http://www.Year2000.com
Re: Legal Issues	http://www.Year2000.com/y2karchive.html
Info. Tech. Association of America	http://www.ITAA.org
Gartner Group	http://www.Gartner.com
Computer Tech. Research Corp.	http://www.CTRCORP.com
Federal Government Services Admin.	http://www.ITpolicy.gsa.gov/mks/yr2000/y201toc1.htm
Governing Magazine Y2K articles	http://web.governing.com/governing/92000.html
National Assoc. of State Information Resource Executives (NASIRE)	http://www.NASIRE.org/conferences/y2k/index.html

Year 2000 Conference

May 20 - 22, 1997	Year 2000 Boston, Hynes Auditorium, Boston Sponsored by DCI, 204 Andover Street, Andover, MA 01810 508-470-3880; http://www.DClexpo.com/2000AD/
June 12, 1997	Year 2000 Awareness Day, 1 Ashburton Place Boston 21st Floor

6D. Assistance Available from ITD's Strategic Planning Group

The Information Technology Division's Strategic Planning Group (SPG) will provide three types of support services with regard to the Year 2000 Project:

1. Foster Awareness and Exchange of Technical Information

- SPG will host the monthly meetings of the Massachusetts Government Year 2000 User Group (a meeting schedule appears in Section 5C). The purpose of the group is to exchange information, resources, strategies and approaches which agencies find particularly helpful.
- Each issue of the quarterly Information Technology Bulletin will contain material about the Year 2000, starting with the Winter 1997 issue distributed last month and also available on the Web at <http://www.state.ma.us/itd/bulletin/>.
- SPG will maintain a Year 2000 Web site for Project information and useful links. The URL for this site is <http://www.eoaf.state.ma.us/y2k/index.stm>.
- SPG will host Year 2000 awareness days and vendor days over the life of the Project in order to facilitate information sharing and provide access to technical and managerial expertise.

2. Provide Coordination and Support

- SPG will make available two Web-enabled PC's so that agencies without Internet access can do Internet research on the Year 2000 at SPG's site (see below). SPG staff will be available for technical assistance.
- SPG will maintain a library of Year 2000 information from sources like the federal government and other states. These resources will include guidelines and formats for assessments, inventories and plans.
- SPG will provide technical assistance in selecting tools for Year 2000 fixes. Through the User Group we will acquire and disseminate information regarding agency's experiences with vendors and products.
- SPG will provide planning assistance in preparing agency assessments and plans for addressing the Year 2000 challenge.
- SPG will publish statewide Year 2000 standards like the material in Section 4, as well as other standards like the Commonwealth Standards and Guidelines for Information Technology which address hardware and software configurations (see <http://www.magnet.state.ma.us/itd/standard/>). The purpose of these standards is to achieve a level of statewide consistency that ensures the interoperability of our systems both internally and externally.

3. Monitor Statewide Efforts and Report on Progress

- SPG will develop and maintain a database to track Year 2000 assessment, planning, validation and implementation activities by agency. The database will enable the creation of regular reports to monitor progress.
- SPG will analyze information gathered via the survey in Section 3 to develop a high-level assessment of agencies' Year 2000 efforts to date. Survey information will also be used to identify the types of resources and support agencies may need.

SPG is located in Room 801 at One Ashburton Place, Boston – the McCormack State Office Building on Beacon Hill. Marcia King is SPG's Year 2000 Coordinator; she may be reached at 617-973-0711 or at Marcia.King@planning@itd.bos (WAN) or at Marcia.King@state.ma.us (Internet).

Appendix A.

Office of the State Auditor's Year 2000 Survey

Office of the State Auditor's Year 2000 Survey

Unless an agency has already gone through a self assessment regarding the Year 2000 software issue, there is a very good chance that answers to many of the following questions will NOT be known. This survey questionnaire is an attempt to help agencies determine their readiness for the next millennium in regard to their information technology and how they stand in relation to other agencies within the Commonwealth of Massachusetts.

Please complete the following questionnaire, by April 30, 1997, and fax it to (617) 727-7192, or Email it to **Robert Buchanan** at (Robert.Buchanan@SAO@state.ma.us), or mail it to the above address. Please confirm receipt of questionnaire by phoning Robert Buchanan at (617) 727-6200 or **Joyce Blackman** at 727-2718.

Agency/Authority/Department/Division's

	<u>Name</u>	<u>Phone Number</u>
Organization	_____	_____
Department Head	_____	_____
Information Systems Officer	_____	_____
Year 2000 Manager	_____	_____
Survey completed by	_____	_____

Awareness

1. Is your agency aware of the Year 2000 problem that most software and technology using date fields for calculations or other processing will be unable to process correctly when using dates after December 31, 1999?
Yes ☐ No ☐
2. Has management set an organization goal to have business operations ready for Year 2000 before any disruption caused by 2-digit-year data occurs?
Yes ☐ No ☐
3. Has your agency begun an effort to ensure that your information systems are Year 2000 compliant?
Yes ☐ No ☐
4. The current status of your Year 2000 initiative is (Please select all that apply):

<input type="checkbox"/> None planned	<input type="checkbox"/> Repair
<input type="checkbox"/> Planned	<input type="checkbox"/> Test & validation
<input type="checkbox"/> Inventory	<input type="checkbox"/> Completed
<input type="checkbox"/> Assessment	<input type="checkbox"/> Other (Specify)

Office of the State Auditor's Year 2000 Survey (continued)

5. Is your agency on schedule to assess the impact of Year 2000 on information technology and take corrective action if necessary? (Please select one)
- ☐ N / A
 - ☐ No schedule established
 - ☐ On schedule
 - ☐ Ahead of schedule
 - ☐ Behind schedule, < 3 months
 - ☐ Behind schedule, 3-6 months
 - ☐ Behind schedule, > 6 months
6. Who at your agency has overall responsibility for the year 2000 issue?
-
7. Are senior management aware of the Year 2000 issue?
- Yes ☐ No ☐
8. Has a Year 2000 Project been established?
- Yes ☐ No ☐
9. Are user management actively involved in the project's progress.
- Yes ☐ No ☐

Assessment

1. Has your organization started a Year 2000 assessment?
- Yes ☐ No ☐ Date initiated (month / year): ____ / ____
2. Has your organization completed a Year 2000 assessment?
- Yes ☐ No ☐ Date completed (month / year): ____ / ____
3. What steps have been taken to assess the impact of Year 2000 on applications? e.g., have inventories been made of:
- ☐ applications / programs performing date calculations
 - ☐ packaged software (supported and unsupported)
 - ☐ end-user developed applications
 - ☐ programs where source code is not available
 - ☐ program languages (supported and unsupported)
 - ☐ databases where dates form part of a key field
 - ☐ interfaces to / from third parties
 - ☐ operating systems (supported and unsupported)
 - ☐ security systems
 - ☐ database systems
 - ☐ compilers (may or may not support Year 2000)
 - ☐ firmware
 - ☐ other system software

Office of the State Auditor's Year 2000 Survey (continued)

4. Indicate types of platforms inventoried for Year 2000 assessment:
☐ mainframes ☐ minicomputers ☐ N A
☐ LANs ☐ microcomputers ☐ Other _____
5. Provide date when Year 2000 will first impact your information systems:

6. Have critical event horizons been established for key business activities?
Yes ☐ No ☐
7. What methodology did you use to develop your estimates of information technology costs?
☐ Line of code estimate
☐ FTE requirement estimate
☐ Function point estimation
☐ Other _____
8. What is your current estimate of Year 2000 costs?
a) Total Cost \$ _____
b) IT Costs \$ _____
c) Cost per line of code \$ _____
9. Estimated cost to replace hardware because of Year 2000 incompatibility

10. What are your cost estimates by fiscal year? ☐ Not determined
1997 _____ 1998 _____ 1999 _____ 2000 _____
11. What proportion of the year 2000 work will be done in-house, and how much will be out-sourced?
% in-house: _____ % out-sourced _____ Not determined ☐
12. Have vendors already been engaged for any phases of the Year 2000 project?
Yes ☐ No ☐
13. Has an assessment been made of the staff needed to test the changes made for Year 2000?
Yes ☐ No ☐
14. What are your expected staffing (FTE) requirements to address Year 2000 for Calendar Years:
1997 _____
1998 _____
1999 _____
2000 _____
15. Has an assessment has been made of any additional hardware capacity requirements.
Yes ☐ No ☐

Office of the State Auditor's Year 2000 Survey (continued)

16. Have you performed a risk assessment of the vulnerability of your programs and applications for the year 2000 problem?
Yes ☐ No ☐
17. If one is planned, indicate when it is expected to be completed. ____/____/____
18. Does your organization transmit data to other organizations?
Yes ☐ No ☐
If yes, identify org(s): _____
19. Does your organization receive data from other organizations?
Yes ☐ No ☐
If yes, identify org(s): _____
20. If yes, was the assessment done with input from the affected parties?
Yes ☐ No ☐
21. Have you evaluated the vulnerability of your agency's systems and applications to external organizations that fail to modify their own systems for the year 2000 problem?
Yes ☐ No ☐
22. What is the size of your information technology application portfolio?
a) Number of lines: _____
b) Number of applications: _____
c) Number of interfaces: _____
23. When did you start your Year 2000 project? _____ (Month and Year)
24. When are you planning to complete the Year 2000 project, (e.g., changes made, tested, and moved into production)?

25. Has the agency has performed an assessment of the impact on:
☐ Tape / archive management systems where dates such as 9/9/99 or 31/12/99 could have been used to indicate the data should not be deleted.
☐ PBX and other communication systems that may be date dependent.
☐ Electronic security and alarm systems that are date dependent.
☐ Other IT dependent systems, specify: _____
26. Has a formal timetable been established for Year 2000 Project?
Yes ☐ No ☐

Office of the State Auditor's Year 2000 Survey (continued)

27. Does the agency software inventory identify for each application system the following:
- ☐ system owners and or users
 - ☐ total lines of code
 - ☐ software language
 - ☐ interfaces
 - ☐ platform(s) supporting the applications
28. Has all software been evaluated for Year 2000 compliance?
- Yes ☐ No ☐
- a) If Yes, software that is Year 2000 compliant (est.) _____ %
- b) If No, software that is NOT Year 2000 compliant (est.) _____ %
29. Number of lines of software needing modification because of Year 2000 _____
30. Does your agency depend on vendor software products that will need to become Year 2000 compliant?
- Yes ☐ No ☐
31. Have you confirmed package software compliance?
- Yes ☐ No ☐
32. Total number of software packages to be modified _____
33. Number software packages to be modified by third party vendor _____
34. Number software packages to be modified by internal staff _____
35. Estimated cost to modify software _____
36. Estimated cost to replace software _____
37. Date by which all coding changes are estimated to be completed: _____
38. Have data files, both internal and those shared with others been reviewed?
- Yes ☐ No ☐
39. Will you require additional capacity for DASD, testing, CPU, for conversion?
- Yes ☐ No ☐
40. Will you need assistance in identifying additional resources, (i.e., vendors, tools)?
- Yes ☐ No ☐
41. Are programs missing source code?
- Yes ☐ No ☐ Don't Know ☐
42. Is system documentation accurate and up to date?
- Yes ☐ No ☐ Don't Know ☐
43. Are there problems currently being experienced in regard to year 2000?
- Yes ☐ No ☐ Don't Know ☐

Office of the State Auditor's Year 2000 Survey (continued)

Planning

1. Does your organization have a written and approved Year 2000 plan?
Yes ☐ No ☐
 - a) If No, will you need assistance in developing a Year 2000 plan?
Yes ☐ No ☐
 - b) If Yes, has the Year 2000 plan been approved by your SIO?
Yes ☐ No ☐
2. What actions relating to Year 2000 have been approved by management:

3. What priorities have been established:

4. What timetable has been set:

5. % IT to replace _____
6. % IT to repair _____
7. % IT not impacted _____
8. Strategies being considered for resolving Year 2000 problems:
 - ☐ change all dates to four digit years
 - ☐ develop program solutions and keep two digit years
 - ☐ big-bang or piecemeal developments
 - ☐ bridge programs
 - ☐ rely on package vendors to supply solutions
9. Have you developed a prioritization of which systems need to be fixed in order to avoid an adverse impact on the public?
Yes ☐ No ☐
10. Does your Year 2000 plan contain specific timetables and milestones?
Yes ☐ No ☐
11. How is application code being made Year 2000 compliant? (Please select one.)
 - ☐ Year 2000 changes mostly performed during normal production modifications
 - ☐ Application code is "frozen" while year 2000 changes are made
 - ☐ Application code has both Year 2000 changes and production modification occurring in parallel.
12. Are vendor supplied products being used to make year 2000 changes
Yes ☐ No ☐
If yes, please list tools used: _____

Office of the State Auditor's Year 2000 Survey (continued)

13. Have you selected tool sets and methodologies?
Yes ☐ No ☐
14. Phases of your Year 2000 effort for which vendors being used: (Please select all that apply.)
☐ Planning ☐ Repair
☐ Inventory ☐ Code Merge
☐ Assessment ☐ Testing
☐ Other: _____
15. Steps taken to mitigate risk: (Please select all that apply.)
☐ None
☐ Business units have created contingency plans
☐ Risks have been scored and target mitigation levels set for the life of the Year 2000 initiative
☐ Prioritizing systems to ensure high value systems are supported
☐ Planning to shutdown low priority business operations
☐ Don't know
☐ Other: _____
16. Do you have documented contingency plans for your year 2000 project if your agency is unable to complete your year 2000 plan as scheduled?
Yes ☐ No ☐
17. Are you using the MMDDCCYY standard as adopted by the Massachusetts Government Users Group for Electronic Data Interchange?
Yes ☐ No ☐
18. If not, what other Year 2000 standards have been established for on-going enhancements and future developments

19. Have you assigned owners and sponsors to the project tasks?
Yes ☐ No ☐
20. Have you contacted current or future vendors regarding compliance?
Yes ☐ No ☐
21. Have you appointed a year 2000 coordinator?
Yes ☐ No ☐
22. Have you selected support resources?
Yes ☐ No ☐
23. Have you assembled a project team?
Yes ☐ No ☐
24. Have you converted or replaced systems?
Yes ☐ No ☐

System Modification

1. What conversion work or piloting of conversions has been carried out?

2. Has all software been made Year 2000 compliant?
Yes ☐ No ☐
3. Is your agency meeting its budget and schedule in the conversion of targeted applications, platforms, databases, archives, and interfaces?
Yes ☐ No ☐
4. Is your agency meeting its budget and scheduling in the development of bridges and filters to handle non-compliant data?
Yes ☐ No ☐
5. Is your agency meeting its budget and schedule in the replacement of targeted applications and system components?
Yes ☐ No ☐
6. Is your agency documenting all code and system modifications and using program change management techniques and/or software?
Yes ☐ No ☐
7. Is your agency scheduling unit, system, and integration tests for all modified software?
Yes ☐ No ☐
8. Is your agency meeting its budget and schedule in eliminating targeted applications and system components?
Yes ☐ No ☐
9. Is your agency communicating all changes to its information systems to all internal and external users?
Yes ☐ No ☐
10. Is your agency tracking the conversion and replacement process and collecting and using project-related statistics to manage the conversion and replacement process?
Yes ☐ No ☐
11. Is your agency sharing information among year 2000 projects?
Yes ☐ No ☐

Testing

1. Has your agency developed and documented test and validation plans for each converted or replaced application or system component?
Yes ☐ No ☐
2. Has your agency developed and documented a strategy for testing contractor converted or replaced applications or system components?
Yes ☐ No ☐

Office of the State Auditor's Year 2000 Survey (continued)

3. Has your agency implemented a year 2000 test facility?
Yes ☐ No ☐
4. Has your agency implemented automated test tools and scripts?
Yes ☐ No ☐
5. Has your agency performed unit, system, and integration tests on each converted or replaced component?
Yes ☐ No ☐
6. Your agency's testing procedures include the following types of tests:
☐ regression
☐ performance
☐ stress
☐ forward and backward
7. Is your agency tracking the testing and validation process and collecting and using project-related statistics to manage the process?
Yes ☐ No ☐
8. Has your agency initiated acceptance test?
Yes ☐ No ☐

Implement New Software

1. Has your agency defined its transition environment and procedures?
Yes ☐ No ☐
2. Has your agency developed and documented a schedule for the implementation of all converted or replaced applications and system components?
Yes ☐ No ☐
3. Has your agency resolved all data exchange issues and interagency concerns?
Yes ☐ No ☐
4. Has your agency dealt with database and archive conversions?
Yes ☐ No ☐
5. Has your agency completed acceptance testing?
Yes ☐ No ☐
6. Has your agency developed contingency plans?
Yes ☐ No ☐
7. Has your agency updated or developed disaster recovery and business continuity plans?
Yes ☐ No ☐
8. Has your agency reintegrated the converted and replaced systems and related data?
Yes ☐ No ☐

Other

1. What barriers have you encountered in carrying out your Year 2000 project, (e.g., lack of resources, uncooperative partners) and how have you overcome them?

Barrier: _____

Solution: _____

Barrier: _____

Solution: _____

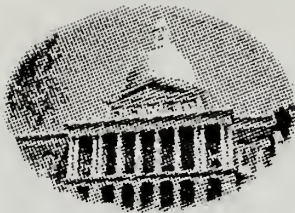
2. When was the last time your agency produced a status report on the year 2000 project?

3. Does your organization have access to the Internet?

Yes ☐ No ☐

4. How would you prefer to be communicated with regard to Year 2000 issues?

- ☐ Email / Internet
☐ Hard copy mailings
☐ Attending work group meetings
☐ Phone call with contact person
☐ Other _____



Commonwealth of Massachusetts
Information Technology Division

Year 2000 Compliance

Hardware Software Vendors

Meeting the Challenge
Second Edition

October, 1997

T. Louis Gutierrez
Chief Information Officer



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Rev. No.	Date	Change History	Page
Initial Release	10/14/97	100 copies distributed at Year 2000 Day	
Revision 1	10/22/97	<ol style="list-style-type: none">1. Added Revision History2. Updated OSD's list of vendors who have signed warranty agreement3. Added section of web sites for major software providers4. Added caveat to Big Buy information5. Reformatted list of Y2K Library documents6. Deleted OSC's web site as a MA Y2K site7. Updated Agency Y2K Coordinators information	<ol style="list-style-type: none">ii6-57-27-67-8,97-18App B
Revision 2	1/5/98	<ol style="list-style-type: none">1. Added date of next Year 2000 Day2. Updated OSD's list of vendors who have signed warranty agreement3. Revised dates for User Group meetings4. Added Embedded Systems web site5. Updated Agency Contact list	<ol style="list-style-type: none">4-16-47-17-6B2-B8
Revision 3	1/26/98	<ol style="list-style-type: none">1. Corrected blank page (Secretary Baker's letter was missing from Rev. 2	1-3

1 Executive Summary

By now, all agencies in the Commonwealth are aware of the Year 2000 issue: the ambiguous use of 2-digit dates in computer programs that may cause computer systems to inaccurately differentiate dates between the 20th and 21st centuries. As we approach the turn of the century, many of these systems will not function or will produce erroneous results.

This booklet has been prepared by the Massachusetts Information Technology Division (ITD) in their effort to provide continued assistance to the agencies of the Commonwealth in meeting their Year 2000 challenge. The first *Year 2000, Meeting the Challenge* was published in April 1997. Over 1500 copies were ultimately printed and distributed. This booklet, the second edition, builds on and updates the information provided in April.

Since publication of the first edition, a number of Year 2000 activities have occurred, including issuance of a letter by Secretary Charles Baker which mandates "uninterrupted turn-of-century service delivery" as "each agency's top operational planning priority." A copy of the letter is included at the end of this section.

Additionally, ITD has launched a number of Year 2000 initiatives and has continued others begun last spring. The Year 2000 Program Management Office (Y2K PMO) was launched in June and is responsible for coordinating Year 2000 activities. The Y2K PMO provides three types of support services:

- Fostering awareness in and exchange of technical information among the agencies of the Commonwealth
- Providing coordination and support to the agencies for their Year 2000 projects
- Monitoring statewide efforts on progress.

As a result of the analysis of the Auditor's survey and the agency visits, the Y2K PMO conducted a Y2K Project Launch Workshop in September which identified Year 2000 project phases and provided a sample project plan. The Agency Project Plan should consist of a five phase approach:

- Awareness
- Inventory
- Assessment and Planning
- Conversion/Replacement
- Validation and Deployment

Most agencies have begun or completed the Awareness phase. The Inventory phase involves collecting a comprehensive inventory of the various systems in the organization in order to make key decisions about how to achieve compliance. In the Inventory phase, agencies should compile a repository of not only custom software, but also hardware, firmware, and commercial off-the-shelf (COTS) software.

The Assessment and Planning phase is the time to make key decisions about how to achieve agency compliance. All impacted applications/systems must be reviewed with respect to business needs and long-term agency objectives. During this phase, agencies should determine whether to retire, replace with COTS, redevelop, or remediate each application/system. In addition, priorities must be established so that only the highest priority and most critical will be converted should scheduling problems arise. During this phase, preparations for testing must also be started.

During the Conversion/Replacement phase, the assessment and strategy developed in the Assessment and Planning stage must be reevaluated, project schedules for all conversion efforts must be coordinated, and change control, configuration management, and test methodologies must be established. Modifications are performed during this stage and unit testing is performed. This phase also includes developing a detailed test plan and establishing the test environment.

The final stage, Validation and Deployment, is the most critical phase. Some experts predict that more than half the cost of millenium compliance will be spent on testing. In fact, within the Commonwealth, both DET and DOR have

estimated 50-60% of their total Y2K projects is slated for testing. During this phase, the test process, environment, and detailed test plan should be reviewed and updated as necessary. Testing must be carried out and documented in detailed test reports. Upon successful completion of the testing, the systems must be redeployed. During this stage, users should be trained on the new systems.

The Y2K PMO is available to assist agencies with their project planning and to provide information upon request. At the end of this booklet is information included in the first edition and updated with the most current information. The Operational Services Division (OSD) recently requested that blanket contract vendors sign an agreement that any services they provide will include a Year 2000 warranty; their list of vendors who signed this agreement is included in this booklet. The last section is a list of various resources for the agencies: the dates of the Y2K monthly User Group meetings and quarterly Year 2000 Days, Year 2000 web sites, including a description and evaluation of some of the most interesting and useful web sites, a description of materials available in the Y2K PMO's Year 2000 Library, and an initial list of non-IT systems which should be included in any Year 2000 project. Appendix B provides a list of Year 2000 coordinators in over 150 agencies in the Commonwealth.

The Y2K PMO has also provided date standards and sample contract language in this booklet. National and international standards organizations such as NIST and ISO are recommending date standards that use a four-digit year where a two-digit century precedes, and is contiguous with, a two-digit year-of-century (e.g. 1999, 2000, etc.). The federal government has adopted this standard for the purposes of electronic data interchange in any recorded form among U.S. Government agencies. The Commonwealth of Massachusetts is also adopting this standard for the purpose of electronic data interchange among its agencies.

The international standard date notation is CCYYMMDD where CC=century, YY=year, MM=month and DD=day. For example, August 4, 1997 would be "19970804"; February 29, 2000 would be "20000229". This notation is becoming increasingly popular and is likely to become a de-facto standard. Commonwealth agencies are strongly advised to use this notation for date representation.

The Year 2000 presents a unique challenge which affects everyone: managers, technical staff, and users. The ITD Y2K PMO is prepared to assist the agencies any way they can to meet this challenge and keep our IT resources working as intended into the next millenium.



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To: All Secretaries and Department Heads
From: Charles D. Baker, Secretary, EOAF
Subject: Year 2000 Compliance
Date: September 29, 1997

We face a unique challenge in the history of Commonwealth operations – a turn of the century, coupled with heavy reliance on automated operational systems.

Therefore, effective immediately, it is ordered that:

1. Uninterrupted turn-of-century service delivery is each agency's top operational planning priority.
2. The management of each agency of the Commonwealth is responsible for assessing its Year 2000 preparedness and bringing its systems into compliance, or devising replacement and contingency plans for insuring smooth operations through the turn of the century, and having such assessments and plans committed to writing.
3. All purchases by Commonwealth agencies of new software, systems, enhancements or equipment shall be Year 2000 compliant.
4. New acquisitions which do not address *specifically identified* Year 2000 deficiencies in older systems should not be put forth as "Year 2000" initiatives.

Agencies are directed to review planned and ongoing technology initiatives in light of this directive and suspend all such initiatives which detract from Year 2000 preparedness efforts, other than those specifically mandated by statewide directives or required by law.

The Information Technology Division, through its Year 2000 Project Management Office, will continue to offer assistance to agencies in their Year 2000 compliance efforts. The Operational Services Division is available to assist with technology procurement matters related to Year 2000 compliance. Please feel free to contact these agencies.

2 Overview

The material in this booklet has been prepared by the Information Technology Division (ITD) Year 2000 Program Management Office (Y2K PMO) to provide continued assistance to the agencies in meeting the Year 2000 challenge. The role of the Y2K PMO in this effort is to:

- foster awareness,
- promote best practices and disseminate lessons learned,
- provide coordination and support,
- monitor progress,
- identify risk areas and risk mitigation activities.

The first edition of *Year 2000, Meeting the Challenge*, published in April of 1997, laid the groundwork for agency awareness of the issue and provided a variety of information. At that time, it was noted that many agencies were already aware of the issue and had begun taking action. Since that time, more agencies have begun organizing and are able to share ideas, information, and lessons learned.

This booklet and ITD's Year 2000 Web site (<http://www.magnet.state.ma.us/y2k/>) build on and update the information provided in the first edition. They provide a more detailed look at an agency's Year 2000 project plan, additional information related to date standards and contract guidance, OSD's current list of vendors who have agreed to provide a Year 2000 warranty, and updated lists of various Year 2000 resources and contacts. The intended audience includes managers, technical staff, and users. Each of these groups continue to have a crucial role to play in both defining the scope of the challenge and implementing viable solutions.

2.1 The Issue

By now, all agencies are aware of the Year 2000 issue; that is, the ambiguous usage of 2-digit dates in computer programs that may cause computer systems to inaccurately differentiate dates between the 20th and the 21st centuries. As we approach the turn of the century and the 2-digit representations become ambiguous, many of these systems will not function or will produce erratic and/or incomplete results. Examples of the types of problems Departments may face are:

- Comparison of dates may be incorrect;
- Sorts on dates may be incorrect;
- Ages may be computed incorrectly;
- Year 2000 may not be treated as a leap year, and
- The use of 9/9/99 as a dummy date may trigger a termination, expiration, or other unexpected function.

Other problems with embedded systems, such as telephone PBX's, security systems, alarms, elevators, and FAX machines may also surface.

For a more in-depth discussion of the issue, please refer to the first edition of *Year 2000, Meeting the Challenge*.

2.2 The Commonwealth Year 2000 Action Plan

To prevent disruption of services, particularly critical services, due to the Year 2000 problem, ITD launched a Commonwealth Year 2000 Action Plan in the Spring of 1997. That plan recognized that achievement of compliance by FY2000, July 31, 1999, required each agency to initiate a Year 2000 effort that would observe a rigorous project schedule. The current recommended schedule is as follows:

- May 31, 1997. Each agency completes its system inventory, prioritizes systems (including identification of mission critical systems), and develops high-level assessments of its Year 2000 challenge.
- July 31, 1997. Each agency completes its detailed assessment, determines a compliance strategy for each noncompliant system (i.e., retire, remediate, or replace), and documents both a master plan and schedule for achieving compliance for all systems and a set of project plans for systems needing to be converted or replaced.
- December 31, 1997. Each agency completes documentation of its project plans and initial test plans for mission critical systems.
- May 31, 1998. Each agency completes documentation of its project plans and initial test plans for all essential systems.
- July 31, 1998. Each agency completes conversion and replacement of mission-critical systems.
- December 31, 1998. Each agency completes conversion and replacement of all essential systems.
- December 31, 1998. Each agency completes validation activities for mission-critical systems.
- January 31, 1999. Each agency has put all mission-critical systems back into production.
- February 28, 1999. Each agency documents detailed risk mitigation plans describing contingency plans for ensuring continuity of operations for services provided by mission critical systems which have not been put back into production by January 31, 1999.
- May 31, 1999. Each agency completes validation activities for all essential systems.

The Gantt Chart displaying these dates is provided below. The project phases and tasks to achieve agency compliance are described in Section 3.

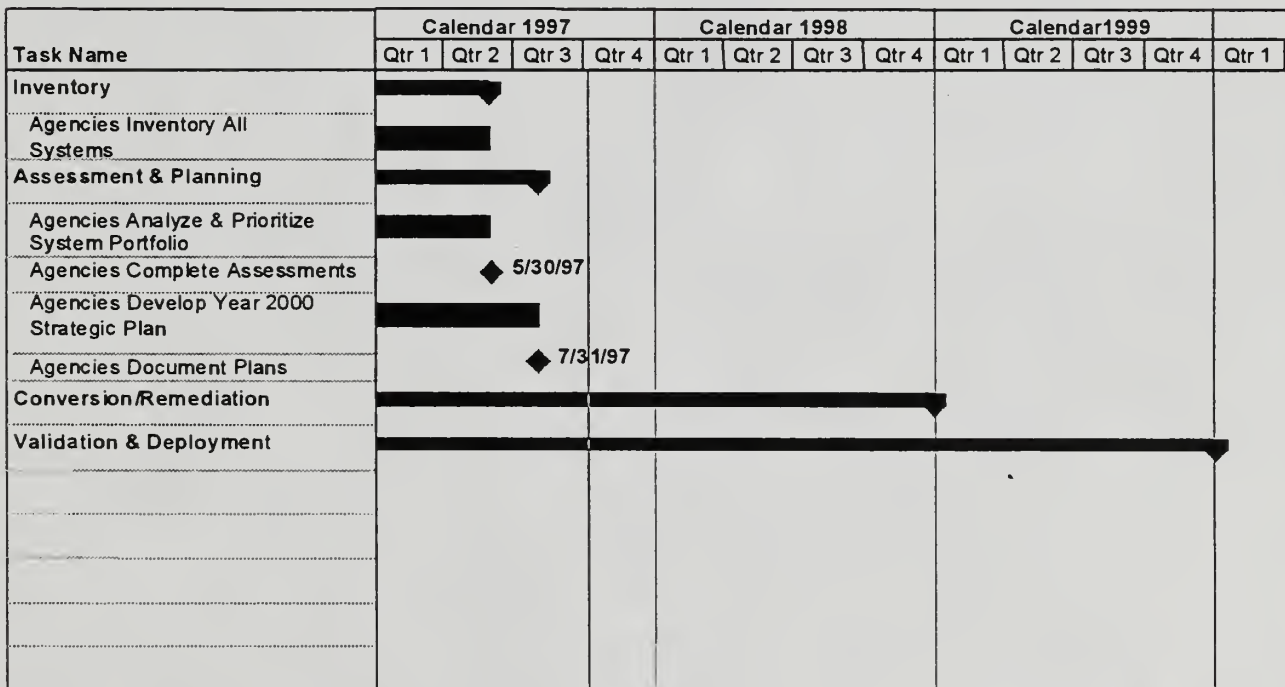


Figure 1-1 Timeline for Inventory and Assessment & Planning Phases

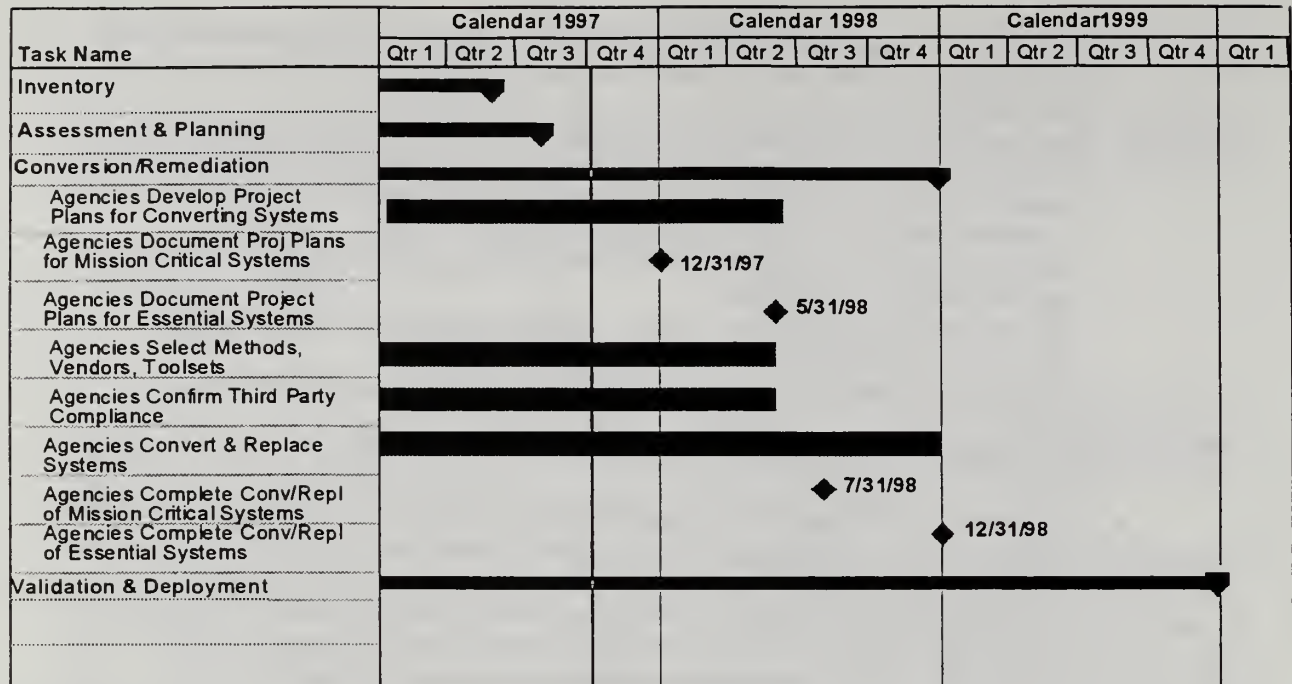


Figure 1-2 Timeline for Conversion/Remediation Phase

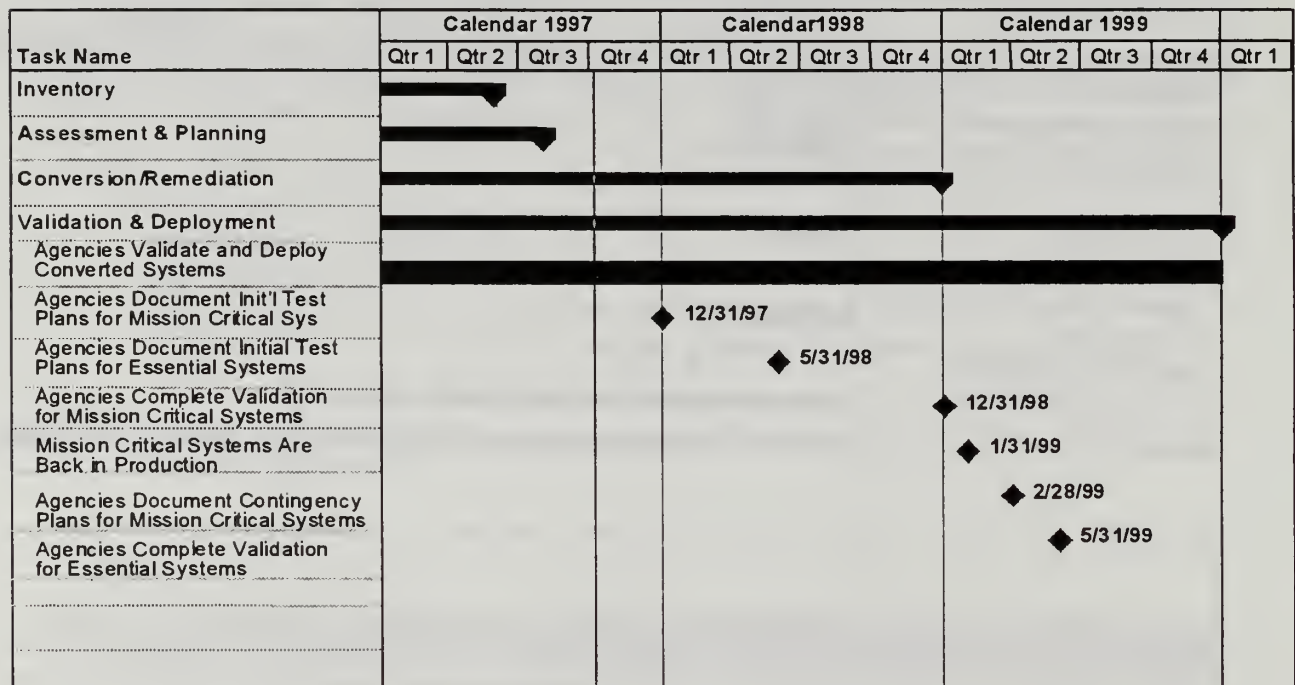


Figure 1-3 Timeline for Validation and Deployment Phase

The Commonwealth Action Plan also called for coordination of statewide activities by ITD. Since then, (Spring 1997), ITD has launched a number of initiatives related to achieving Year 2000 compliance for the Commonwealth. They include:

- establishing and staffing a Year 2000 program office;
- identifying Year 2000 coordinators at each agency;
- forming a state-wide users group, hosting awareness programs, conducting seminars and workshops, and promoting best practices among agencies;
- coordinating Year 2000 activities with the Office of the State Auditor, the Fiscal Affairs Division (formerly Budget Bureau), and the Operational Services Division;
- interviewing the state agencies to determine the status and scope of their Year 2000 projects and to identify the compliance status of their mission-critical systems; and
- providing resources and information (web site, Y2K library, *Year 2000, Meeting the Challenge*, monthly User Groups, and quarterly Year 2000 Days).

In the coming months, the PMO will continue to monitor and report of the Commonwealth's progress in meeting the Year 2000 challenge, identify risk areas and risk mitigation activities, disseminate lessons learned to state agencies, and serve as a Year 2000 resource to state agencies in the three branches of government. Additional information on the Y2K PMO is provided in Section 4.

3 Action Plan Phases

ITD has identified five major phases for an agency's Year 2000 project:

- Awareness.
- Inventory.
- Assessment and Planning.
- Conversion/Replacement.
- Validation and Deployment.

To aid agencies in planning their Year 2000 project, a sample Year 2000 Project Plan is provided in Appendix A.

3.1 Awareness

The Awareness Phase is both an initial step and an on-going effort for the project. It includes those activities necessary to establish the Year 2000 project as a high priority project within the Agency. This phase includes activities like the following:

- Identifying the Year 2000 coordinator for the agency and the Year 2000 project team.
- Identifying the lines of accountability for the project.
- Identifying the agency's core business areas and processes and assessing the potential impact of Year 2000-induced failures.
- Setting the agency priority for the project.
- Obtaining senior management approval and support for the project.
- Determining a communications plan and activities to ensure senior management, technical staff, and end-users are aware and involved in the project.

3.2 Inventory Phase

The Inventory Phase involves creating a comprehensive inventory of the various systems in the organization. This information will be used to make key decisions about how to achieve compliance.

The Agency's systems inventory forms the backbone of the project.

The inventory should include such information as:

- Applications. Language, lines of code, version, users, criticality, existing test sets/scripts, current level of maintenance, last build information, current life expectancy, anticipated date of failure, performance requirements, primary points of contact.
- Program libraries.
- Related software: copybooks, Job Control Language, PROCS, control members; screen painters; report generators, dialogues.
- Object code with no source.
- Embedded vendor code.
- Commercial off-the-shelf (COTS) software.
- Platforms and system software, including version number, release information, capacity, operational constraints, disaster recovery plans, planned changes over the project duration, primary points of contact.
- Interfaces: Type (e.g., system-to-system, external, system-to-desk-top applications), structure documentation, owner (who defines the structure).
- Performance requirements.
- Documentation.
- Archived data.

- Non-IT devices which may use computer chips with date logic (e.g., phones, security systems, heating & lighting systems).

The approach for collecting the information will vary depending on the resources, constraints, and the current risk mitigation plan. It usually involves surveying/interviewing key Agency personnel and it may involve special tools to help identify system/application components. In every case, a tool is needed to help store the information. In some cases this can be a simple set of spreadsheets or an Access database. In other cases a more powerful tool like an asset management tool is required.

Figure 3.1 depicts recommended tasks for the Inventory Phase, which are discussed below.

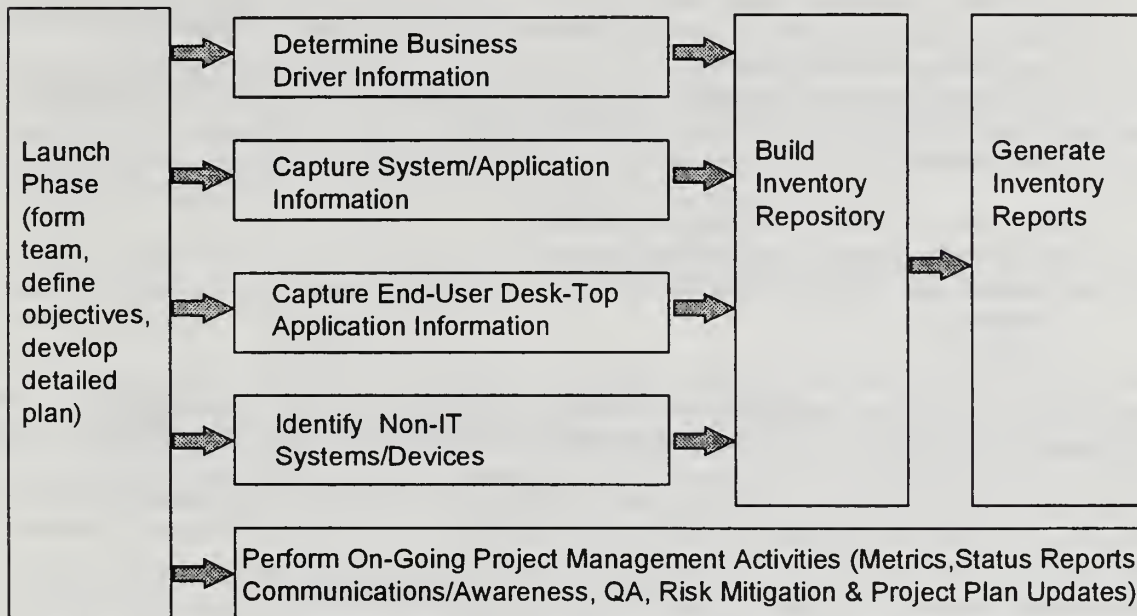


Figure 3.1. Major Tasks for the Year 2000 Inventory Phase

Launch Inventory Phase. This step includes normal project kick-off activities:

- Identify all team members and extended team members (e.g., “platform” experts, system/application “build” experts, system/application “criticality” experts, and system/application “business driver” experts).
- Specify roles & responsibilities.
- Determine project methods.
- Review/develop project materials.
- Identify and obtain project tools.
- Review/develop detailed plan, including major milestones and deliverables.

Determine Business Driver Information. The project team will contact the Agency “business driver” experts and collect information on:

- Services the agency performs and systems supporting each service.

- Criticality by user of each service.
- Current plans for retiring each system.
- Operational constraints on each system.
- Initial/draft priority groupings of systems/applications.

Capture System/Application Information. The project team will contact:

- Agency "platform" experts and collect information on:
 - Hardware, operating systems, versions, and upgrade plans.
 - Capacities, operational constraints, and disaster recovery plans.
 - Applications, users, and interfaces.
- Agency "build" experts and collect information on:
 - Software build components, last build information (e.g., date, compiler, compiler options, "make" files), sizing, and documentation.
 - Current level of maintenance and the Configuration Management and Change Control procedures.
 - Commercial off-the-shelf (COTS) software being used.
 - Archived data.
- Agency "criticality" experts and collect information on:
 - System/application performance requirements.
 - Expected Year 2000 fail dates and users.
 - Interfaces.
 - Existing test cases.

Capture End-User Desk-Top Application Information. The project team will contact end-users to determine what PC applications they are using and basic information about each application (e.g., vendor/developer, version).

Identify Non-IT Systems/Devices. The project team will contact technical staff and end-users to determine what non-IT devices are being used and basic information about each application (e.g., vendor/developer, version).

Build Inventory Repository. The project team will store all collected information.

Generate Inventory Reports. The project team will generate inventory reports.

Perform On-Going Project Management Activities. Throughout this phase, the project team will perform on-going project management activities like the following:

- Provide project status reports and present information for project reviews.
- Perform planned Year 2000 communications and awareness activities.
- Perform risk assessments on the project.
- Update the project plan to reflect progress, risk mitigation activities, and lessons learned.

☛ We have provided a sample Project Plan in Appendix A of this document.

- Prepare required deliverables.

Suggested deliverables for the Inventory phase include:

- Project Plan for the Inventory Phase (for a sample Project Plan, see Appendix A).
- Roles and Responsibilities.
- Weekly Project Status Reports.
- Agency Repository of System Information.
- Inventory Reports.

3.3 Assessment and Planning Phase

The Assessment and Planning phase, is the time to make key decisions about how to achieve Agency compliance. This task requires that all impacted applications/systems be reviewed with respect to business needs and long-term Agency objectives. Each application/system must be assigned to one of the following categories:

- Retire.
- Replace with commercial off-the-shelf software (COTS).
- Redevelop (business process reengineering, re-hosting or new application development).
- Remediate (or modify code) for millennium compliance.

Furthermore, the criticality of each system must be established or verified to ensure that they are given the highest priority when scheduling the conversion effort.

For each application/system slated to be replaced or redeveloped, the agency Year 2000 project team must identify the owner of the current system, the project manager of the replacement/redevelopment effort, and the project schedule for the replacement or redeveloped system(s). The agency Year 2000 project team must coordinate with all these projects to ensure millennium compliance issues are being addressed for the replacement or redeveloped systems and to ensure the development of contingency plans in case schedules slip.

For the systems slated to be remediated, the agency Year 2000 project team must establish a remediation schedule that gives priority in accordance with system criticality and expected failure dates while taking advantage of possible economies. For example,

An Agency has 7 systems: 2 systems use an obscure language; the first is very critical to the Agency; the other, not; 3 of the remaining systems have a greater criticality than the second. The agency Year 2000 project team must bring in an outside expert to analyze and modify the code for the first system. The project team must decide if it is economical to have the expert convert the code for the second system at the same time even though it has a criticality lower than other systems the Agency plans to convert.

For each application/system slated to be remediated, the agency Year 2000 project team must also perform a detailed analysis to identify the affected lines of code and interface issues and to estimate the resources required for conversion. Given this information and the top-level agency objectives, the team must decide:

- The definition of compliance for the system. The degree of compliance must match the criticality of the system. The definition of compliance must be testable. In some cases, full Year 2000 compliance is not required or desired. These cases must be fully documented.
- The level of conversion: "full date expansion" or "stabilization" only. (In the latter case, database dates are expanded only as last resort and program code is corrected by adding windowing logic for date-related comparisons and calculations.) Expansion is often the preferred choice of IT professionals, but windowing is typically faster and cheaper.
- The impact on archived data.
- To identify and delete "dead" code.
- Whether to reduce data redundancy.
- An estimate of resources and time required for remediation.
- The system/application selected for the pilot.

Prepare for testing early

Because Year 2000 compliance testing can account for 35-50% of project costs, the agency Year 2000 project team must assess the current testing process and determine the testing requirements:

- What is the current test environment? What tools are being used? Is the current testing process adequate for the Year 2000 conversion project?
- For each system, is the test plan up to date? Is it used consistently? Are metrics kept on the number of defects?

- What test suites are available?
- What performance tests are required?
- What are the regression tests required for demonstrating the Year 2000 conversion modifications have not degraded system functionality?
- What are the additional, specific compliance tests required for each system?

The current configuration management process must also be assessed. This includes addressing issues like the following:

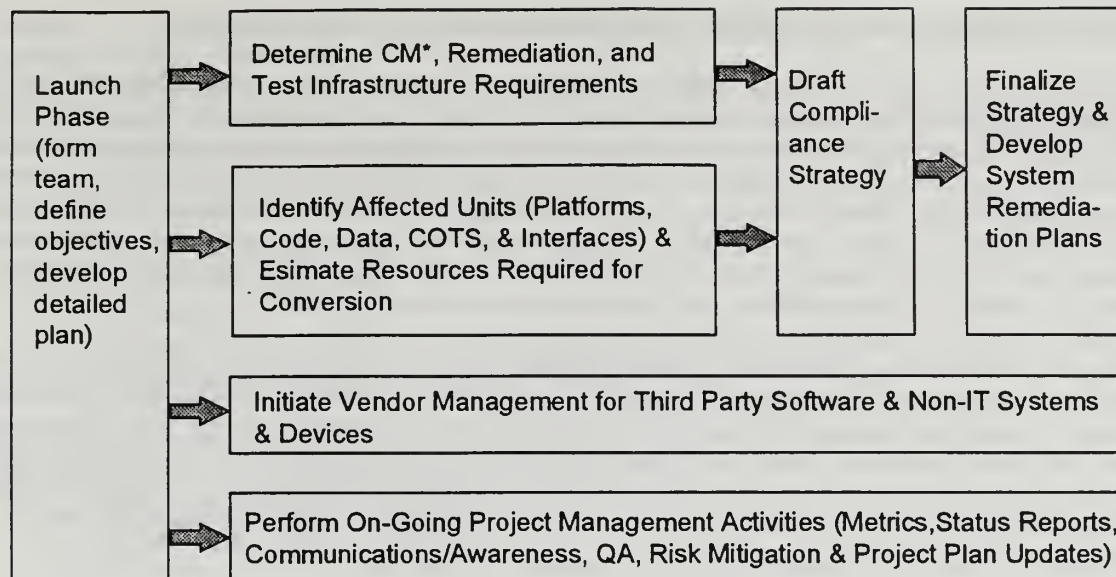
- Are the configuration management plans and procedures up to date? Are they used consistently?
- Is the current configuration management process adequate for the Year 2000 project? Can it support the range of environments and the bridge software which must be managed? What metrics are being used? What are the known weaknesses in the process?
- What tools are being used?
- What is the normal release cycle for each system?
- What modifications are being planned for each system? What is their schedule?

The agency Year 2000 project team must then develop a Year 2000 conversion strategy for the Agency to accommodate these decisions. This strategy should be documented in a Year 2000 Project Plan. A sample Agency Year 2000 Project Plan is provided in Appendix A of this booklet.

An agency's Year 2000 conversion strategy should include:

- A statement of objectives and priorities reflecting business needs.
- Application groupings and project phasing.
- A schedule showing milestone dates for converting each application/system.
- Resource requirements, e.g., staff, budget, tools, hardware, software.
- Implementation approach, including a description of remediation and testing tools, a test strategy, and a configuration management methodology.
- Detailed project plans for applications/systems scheduled for remediation.
- Anticipated bridge programs.
- Anticipated non-IT device upgrades/replacements.
- A plan for data conversion.
- Plans for ensuring normal maintenance procedures maintain compliance.
- Deployment plans and anticipated training requirements.
- Risk assessment and mitigation plans.
- Contingency plans.
- Description of the conversion pilot(s).

Figure 3.2 depicts recommended tasks for the Assessment and Planning Phase, which are discussed below.



* CM- Configuration Management

Figure 3.2. Major Tasks for the Year 2000 Assessment and Planning Phase

Launch Assessment and Planning Phase. The activities for this phase are determined by the size of the project. For very large agencies and Year 2000 projects, each phase should include a Launch task similar to the one described for the Inventory Phase. For smaller agencies and Year 2000 projects, the Launch task should be a time to review the staffing and project materials and plans and to adjust them as necessary.

Determine Configuration Management, Remediation, and Test Infrastructure Requirements. The project team must evaluate the Agency's readiness to begin remediation. This includes an evaluation of the status of the source code vs. the executable code for each system, the current development and maintenance infrastructure, in particular the current Configuration Management and Change Control process, the testing environment (e.g., test beds, test procedures and tools for problem tracking and resolution), and the available capacities for performing code modification and test. Once this is done the project team must determine the requirements for the Year 2000 remediation and test infrastructure. This task also includes the identification of standards the Agency's will use for their Year 2000 conversion project.

Industry Lessons Learned for Year 2000 conversions indicates that systems which have not been rebuilt from source in long periods of time often have significant configuration management problems, e.g., missing source code and source code that does not match the production executables. These systems require significantly more effort for Year 2000 code modification preparation. Similarly systems which have no current test cases will require additional effort just to define regression testing requirements.

Identify Affected Units and Estimate Resources Required for Conversion. In parallel with the previous task, the agency Year 2000 project team must begin the assessment of the Agency's IT systems not already slated for replacement or retirement prior to FY 99. The goal of this task is to identify lines of code containing date or date-field logic as well as noncompliant platforms and system software. The identification of affected code typically involves the use of tools like:

- "data name rationalizers" which build and use lists of standard names indicating date fields to parse the code.
- "slicers" which follow a date variable identified in one module through various calls or returns to other modules.

The analysis must include associated files (such as copybooks and JCL) as well as source code.

After the affected lines of code are identified and the necessary system upgrades are determined, the project team must develop estimates of the resources required to modify and test individual systems for Year 2000 compliance. There are some Year 2000 assessment tools which assign levels of complexity to sections of code using an identified date field and determine estimates of resources required to fix the code, but these advanced tools are available only for certain platforms and software languages. The actual estimating process must consider the amount of affected code, its current "build" status, the availability and currency of test cases, the type of code modification to be performed (e.g., full 4-digit expansion of the date fields or windowing), and the resources required for data conversion in case full 4-digit expansion is used to bring the system into compliance.

Draft Compliance Strategy. The agency Year 2000 project team must understand the criticality of each system to correctly determine its Year 2000 compliance strategy: retire, replace, or remediate. In many cases, the strategy will be obvious. In other cases, the project team (with the business process experts) will have to weigh the criticality, interfaces, fail dates, and current system retirement with the estimates developed for the previous task. Note that it is desirable to retire all marginal systems. For each system to be remediated, the team must also document the compliance definition for each system. Part of the compliance strategy should also include a "make vs. buy" decision.

When all the systems which will be remediated have been identified, the team must consider the order in which the systems will be entered into the Year 2000 conversion pipeline(s). The order will depend on priority, technical environment, and interfaces. The goal is to group systems which will be modified in a manner which will reduce the total number of bridge programs which must be written to accommodate unit and intersystem testing.

The project team is then ready to document the Agency's compliance strategy information described previously.

Finalize Strategy and Develop System Remediation Plans. The Agency's senior management must review the draft compliance strategy described above and make all final conversion decisions. Once the strategy has been approved and finalized, the agency Year 2000 project team must develop a detailed work plan and test plan for each of the systems slated for remediation.

Initiate Vendor Management for Third Party Software & Non-IT Systems & Devices. Throughout this phase, the agency Year 2000 project team must have in place a task force to monitor the compliance status of COTS software and non-IT devices/systems being used by the Agency. This information impacts the schedule for final testing and the need for contingency planning. Vendor management typically begins with a web search for compliance information provided by the vendor, but it usually also includes a request to each vendor for a written statement of compliance to satisfy legal concerns. (See Section 6.)

Perform On-Going Project Management Activities. (See the discussion provided for the Inventory Phase.)

Suggested deliverables for the Assessment and Planning phase include:

- Project Plan for the Assessment and Planning Phase (for a sample Project Plan, see Appendix A).
- Roles and Responsibilities.
- Weekly Project Status Reports.
- Year 2000 Assessment Report.
- Agency's Strategy for Achieving Year 2000 Compliance.
- Project Plans for Systems Being Remediated.

3.4 Conversion/Replacement Phase

During the Conversion /Replacement phase, the agency Year 2000 project team must lead all remediation efforts and coordinate with project teams responsible for replacement/redeveloping systems and for updating hardware, operating systems, and commercial off-the-shelf software. This a very dynamic period as unexpected conversion

problems will arise even as production applications/systems continue to evolve in response to business-as-usual changes. It is very important to:

- Develop a project schedule that addresses all of the Agency's systems.
- Develop a phased project schedule that addresses the Agency's systems which will be remediated.
- Designate team leads to address specific aspects of the remediation problem as well as application leads. Special areas may include:
 - Code "staging".
 - Unit and regression testing.
 - Configuration Management.
 - COTS software.
- Continually collect lessons learned on the project and refine the project plan, contingency plans, and tools as necessary to achieve efficiencies and reduce risks.

The Conversion or Replacement phase begins with an evaluation of the assessment and strategy. It is essential that the agency Year 2000 project team understands and agrees on:

- Goals, schedule, and responsibilities.
- Standards, procedures, and metrics.
- The definition of compliance for each system/application and system performance requirements.
- The test plan and testing environment, particularly for unit and regression testing.
- Change control and configuration management methodology.
- Quality assurance methodology.
- Tools.
- The Risk Mitigation Plan.

The change control and configuration management methodology and a test methodology must be established as soon as possible. Wherever possible, they should augment (not overhaul) the infrastructure which is already in place.

The test methodology should be captured in:

- An integrated test plan for the Agency Year 2000 conversion that focuses on inter-system testing required before a system can be redeployed.
- A system test plan for each of the Agency's systems/applications which are scheduled for code modification.
- A description of the test environments required, including the identification of specific Year 2000 testing tools.

Once the test environments are well understood, they should be established in a timely manner to support the unit and regression test requirements for remediation.

The next critical success factor is to establish a process for code modification. The process will include steps like the following:

- Identify "chunks" of code and associated software. A chunk of code is the source code for a group of modules in a given language. A chunk typically includes one or more systems but it can include all or part of one or more systems. A chunk can also include related code like JCL. Chunks should be determined to simplify unit testing.
- Generate/verify regression and Year 2000 compliance tests for each chunk.
- Establish configuration control for all the components of each chunk.
- Examine, modify, and verify each chunk.
- Develop bridge software as required for regression testing.
- Perform regression tests.
- Perform any additional Year 2000 compliance tests for the specific system.
- Track/reconcile problems discovered in (unit) testing.
- Merge any business-as-usual maintenance changes performed during this period (including retest).
- Report code changes.
- Report test results and concerns for Agency-wide testing/redeployment (this should include conditions for removing bridges used for testing as interfacing systems also become compliant).

- Report process problems and lessons learned.
- Evaluate process problems and lessons learned and fine-tune process.

Figure 3.3 depicts the primary tasks recommended for the Conversion/Replacement Phase.

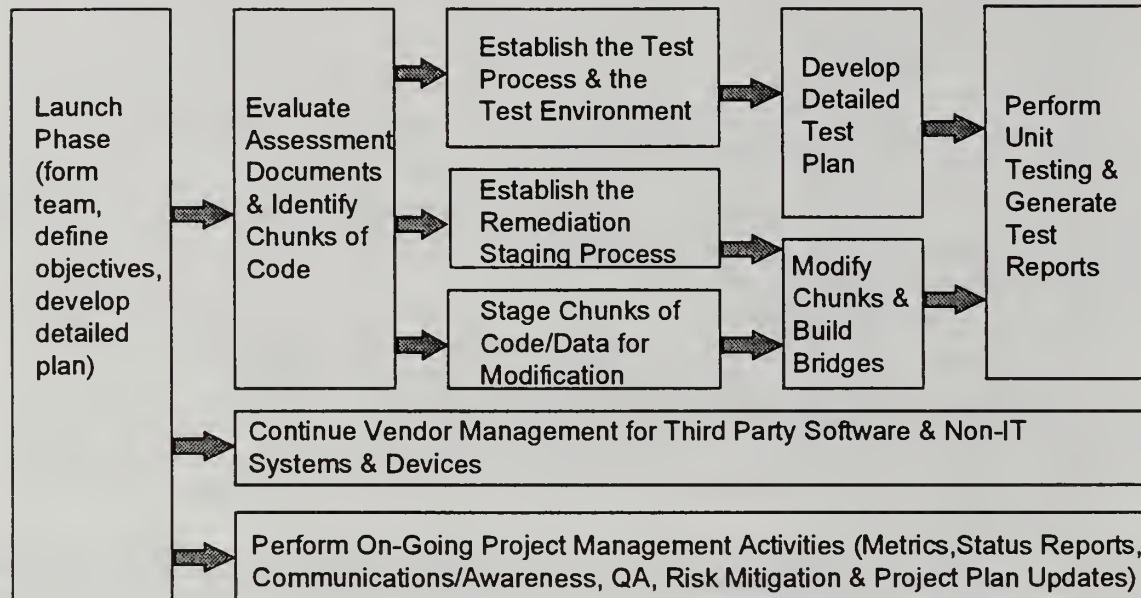


Figure 3.3. Major Tasks for the Year 2000 Conversion/Replacement Phase

Launch Conversion/Replacement Phase. The activities for this phase are determined by the size of the project. For very large agencies and Year 2000 projects, each phase should include a Launch task similar to the one described for the Inventory Phase. For smaller agencies and Year 2000 projects, the Launch task should be a time to review the staffing and project materials and plans and to adjust them as necessary.

Evaluate Assessment Documents and Identify Chunks of Code. The Year 2000 project team, which may have changed since the Assessment and Planning Phase, must ascertain the current status of the Year 2000 assessment and determine if and how it needs to be augmented. In particular, the project team must evaluate the following:

- Assessment of the Agency current test strategy, including the description of the test environment, including an indication of which systems do not have current test cases.
- Assessment of the Agency current configuration management and change control methodology.
- Agency's strategy for achieving millennium compliance.
- Agency's standards to be used for achieving millennium compliance.
- Test strategy for achieving millennium compliance.
- Compliance definition and test plan for each system being modified for compliance.
- Year 2000 Conversion Project Plans by System/Application.

Finally the project team must verify/define the system priorities and order in which they will be sent through the Year 2000 conversion pipeline.

Establish the Test Process and the Test Environment. The project team must establish the test environments for unit/regression testing and specify the environments for final testing. This must include a test region capable of using simulated system dates. The team must also develop procedures for tracking and correcting problems

identified in testing. This includes special procedures for resolving disputes between the test team and the coding teams.

Establish the Remediation Staging Process. The agency Year 2000 project team must determine the procedures and tools for each conversion pipeline. (Typically there is one conversion pipeline for each platform/language combination.) The procedures must address the items delineated above for establishing "a process for code modification". The tools must be selected to optimize modification efficiency given the Agency's specific constraints (e.g., budget, staff support, and tools already available). In particular the project team must ensure that the configuration management process is sufficient to handle the constraints and dynamics of the remediation and test effort.

Stage Chunks of Code/Data for Modification. The project team must ensure that each chunk of code is ready for remediation. This task can be hard or easy depending on the level of configuration management employed for the systems include in the "chunk". The task includes:

- Verifying the "build" components for each chunk, including compiler options.
- Finalizing the test cases for each system and generating the necessary test data. These unit tests include basic regression tests to ensure there is no loss of functionality due to Year 2000 code modifications and other specific Year 2000 tests (e.g., Dec. 31, 1999 to Jan. 1, 2000 roll-over, Feb. 29, 2000).
- Updating the work plan for each system in chunk.
- Verifying or generating regression test for each application.
- Baselining system components and test sets.

Develop Detailed Test Plan. The project team will generate the Detailed Test Plan, which will include:

- A list of the systems to be tested.
- A description of the test environment(s), including tools.
- A description of the process to receive and maintain system components required for testing.
- Procedures for tracking and correcting problems identified in testing.
- Special procedures for resolving disputes between the test team and the coding teams.
- Test cases for verifying Year 2000 compliance for each system.
- Test cases for verifying Year 2000 compliance between systems, i.e., verifying that the exchange of data between (unit tested) compliant systems does not result in the loss of compliance for any system.
- Procedures for testing after bridges have been built or burned, after code has been merged with business-as-usual updates, or after a COTS update.

Modify Chunks and Build Bridges. The project team is now ready to modify code. Each chunk of code must be modified using the process and tools previously defined. Any bridges required for unit testing must be developed at this time.

Perform Unit Testing and Generate Test Reports. The project team will perform the regression and unit test cases previously developed and document the results in test reports.

Continue Vendor Management for Third-Party Software and Non-IT Systems and Devices. (See the discussion provided for the Assessment and Planning Phase.)

Perform On-Going Project Management Activities. (See the discussion provided for the Inventory Phase.)

Suggested deliverables for the Conversion/Replacement phase include:

- Project Plan for the Conversion/Replacement Phase (for a sample Project Plan, see Appendix A).
- Roles and Responsibilities.
- Weekly Project Status Reports.
- Remediation Standards.
- Detailed Project Plans for Systems Being Remediated.
- A Test Plan for the Agency Year 2000 conversion.

- Unit Test Reports.

3.5 Validation and Deployment

The Validation and Deployment phase is most critical to the Year 2000 solution. Some experts estimate that more than half the cost of millennium compliance projects will be spent on testing. Rigorous testing is required to ferret out buried Year 2000 problems which were not uncovered during assessment and remediation or which have been inadvertently created by automated remediation tools. Testing must also ensure the remediated systems still meet performance and user functional requirements.

Testing activities should begin long before the official Validation phase. As most IS professionals know, testing is a critical phase of software/system development and maintenance, and the foundation for a successful testing phase must be laid in each preliminary phase. A brief recap of the "pretesting" activities (discussed above) that should be performed in earlier phases of any Year 2000 Conversion Program are shown in the table below.

Phase	Activity in Preparation of Testing
Assessment and Planning	<ul style="list-style-type: none"> • Identify failure dates for each system. • Identify criticality of each system. • Identify existing test cases for each system. • Identify performance requirements for each system. • Identify interfaces: system-to-system, external, desk top applications. • Identify COTS software used in each system. • Identify hardware/software used to build/run each system. • Assign each system to one of the following categories: <ul style="list-style-type: none"> ▪ Retire. ▪ Replace with COTS software. ▪ Redevelop (business process reengineering, re-hosting or new application). ▪ Remediate for millennium compliance. • Determine the schedules for systems being replaced or redeveloped. • Establish/verify the criticality of each system. • Assess the current test environment(s) for systems being remediated. • Determine (and monitor) the schedules for systems being remediated. • Define compliance for each system being remediated. • Develop a Test Strategy for Achieving Millennium Compliance (Agency-wide). • Develop a test plan for each system being remediated.
Conversion or Replacement	<ul style="list-style-type: none"> • Monitor the schedules for systems being replaced or redeveloped. • Develop a phased project schedule for systems being remediated • Verify compliance for each system being remediated.

Phase	Activity in Preparation of Testing
	<ul style="list-style-type: none">• Develop an integrated test plan for the Agency Year 2000 conversion that focuses on inter-system testing required before a system can be redeployed.• Develop a system test plan for each of the Agency's systems/applications which are scheduled for remediation.• Describe the Year 2000 conversion test environments required, including the identification of specific Year 2000 testing tools.• Establish the test environment(s) for systems being remediated.• Develop bridge software as required for regression testing.• Perform unit tests.• Track/reconcile problems discovered in (unit) testing.• Report test results and concerns for Agency-wide testing/redeployment.

Note that some of the pretesting activities in the Conversion or Replacement phase (like "perform unit test") could properly be considered as belonging to a testing phase. They are included here because they allow Agency acceptance of remediated code in a timely manner and clearly delineate the inter-system testing required to redeploy systems into normal operations.

The Validation phase is the final step to ensure the Agency's systems will function correctly as we approach and enter the year 2000. This phase focuses on (interfaces and) integration, performance, and stress testing. Throughout this phase the test team must ensure that test suites are current and complete, and they must continuously monitor defect identification, correction, and retest.

The Validation phase requires the establishment of a test process that includes procedures for handling the following:

- Documenting the systems being tested, their definitions of compliance, and their interfaces.
- Maintaining test cases (scripts and data) required for the testing scenarios.
- Developing/monitoring bridge software and schedule for burning.
- Monitoring the compliance schedule for COTS software.
- Merging business-as-usual and COTS software updates.
- Retesting after bridge, maintenance business-as-usual, or COTS changes.
- Tracking/reconciling problems discovered during test.

The Year 2000 Project Manager must constantly monitor results and ensure updates to the project plan and contingency plans are made as necessary. The agency must ensure that the final Year 2000 test suites are made part of the required regression test suites for the various systems so that the systems remain millennium compliant after deployment.

The final step of the Validation phase, is deployment: the agency Year 2000 project team must put corrected applications/systems back into production. This step requires a great deal of coordination with other interfacing systems. Deployment may require implementation of additional bridge programs to ensure correct interfaces with internal and external systems which have not been remediated. Updates to user documentation, training materials, and contingency plans are also usually required.

Figure 3.4 depicts the primary tasks recommended for the Validation and Deployment Phase. Like the Conversion or Remediation Phase, many of the tasks focus on readiness.

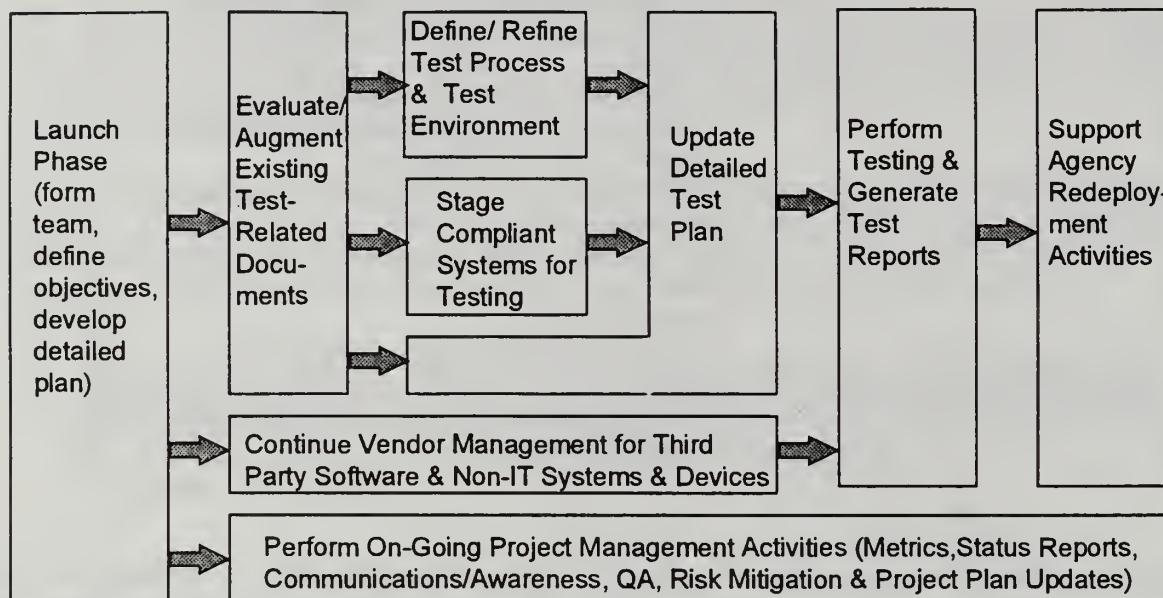


Figure 3.4. Major Tasks for the Year 2000 Validation and Deployment Phase

Launch Validation and Deployment Phase. The activities for this phase are determined by the size of the project. For very large agencies and Year 2000 projects, each phase should include a Launch task similar to the one described for the Inventory Phase. For smaller agencies and Year 2000 projects, the Launch task should be a time to review the staffing and project materials and plans and to adjust them as necessary.

Evaluate Existing Test-Related Documents. For each conversion project, the project team must evaluate all test-related documents (including compliance requirements, failure dates, criticality, interface documents, performance requirements, existing test plans, unit test reports, inter-system test plans, bridge software reports, COTS schedules) to determine both weaknesses and efficiencies relative to the specified test process and test environment.

Define/Refine the Test Process and the Test Environment. The agency Year 2000 project team must determine the types of testing environments needed, capacities, and procedures for using each testing environment. The procedures must address the items earlier in this section for establishing a test process. Then the team must establish the actual test environment (including test tools) and ensure that the configuration management process is sufficient to handle the constraints and dynamics of the test effort.

Note: For agencies that are customers of the Massachusetts Information Technology Center (MITC) in Chelsea, see Appendix C for initial test environment information.

Stage Compliant Systems for Testing. The project will begin staging systems for testing. This includes

- Receiving unit-tested System Components, unit test cases and test data, a list of the system's interfaces.
- Defining compliance tests necessary to test the system interfaces.
- Generating Test Scripts and Data to test the system interfaces.
- Scheduling system tests.
- Baselining all components and test cases and data.

Update Detailed Test Plan. The project team will generate or update the Detailed Test Plan, which will include the following:

- List of the systems to be tested.
- Description of the test environment(s), including tools.
- Description of the process to receive and maintain system components required for testing.
- Procedures for tracking and correcting problems identified in testing.
- Special procedures for resolving disputes between the test team and the coding teams.
- Test cases for verifying Year 2000 compliance for each system.
- Test cases for verifying Year 2000 compliance between systems, i.e., verifying that the exchange of data between (unit tested) compliant systems does not result in the loss of compliance for any system.
- Procedures for testing after bridges have been built or burned, after code has been merged with business-as-usual updates, or after a COTS update.

Continue Vendor Management for Third-Party Software and Non-IT Systems and Devices. (See the discussion provided for the Assessment and Planning Phase.)

Perform Testing and Generate Test Reports. The project team is now ready for testing. The systems involved must be installed in the test environment using the process previously established and tested using the test plan and the system test cases. All test results must be recorded in the test report(s). The testing task must also accommodate business-as-usual updates to the applications and compliance updates to COTS packages. As COTS updates are received and additional systems achieve compliance, bridge software developed for unit testing must be removed. Typically all these updates require retesting.

Support Agency Redeployment Activities. The Agency must redeploy the tested systems into production. This task may include items like redeployment planning, contingency planning, and disaster recovery planning.

Perform On-Going Project Management Activities. (See the discussion provided for the Inventory Phase.)

Suggested deliverables for the Validation and Deployment phase include:

- Project Plan for the Validation and Deployment Phase (for a sample Project Plan, see Appendix A).
- Roles and Responsibilities.
- Weekly Project Status Reports.
- A Test Plan for the Agency Year 2000 conversion.
- Test Reports.

(The information presented in this section is based on SAIC internal Y2K documentation and is reproduced here with their permission.)

4 Year 2000 PMO

4.1 ITD Y2K PMO

In June, ITD's Strategic Planning Group (SPG) established the Year 2000 Program Management Office (Y2K PMO) to coordinate the Commonwealth's Year 2000 effort. The purpose of the Y2K PMO is to:

- Ensure accurate monitoring of the Commonwealth's progress in meeting the Year 2000 challenge;
- Identify risk areas and risk mitigation activities;
- Disseminate lessons learned to state agencies; and,
- Serve as a Year 2000 resource to state agencies and departments in the three branches of government.

The Y2K PMO is also networking with Year 2000 Program Offices from other states with monthly teleconferences to discuss Year 2000 issues peculiar to states and to share lessons learned.

The Y2K PMO is located in Room 801 at One Ashburton Place, Boston – the McCormack State Office Building on Beacon Hill.

4.2 Who We Are

The Y2K PMO consists of six people. We are available to any state agency to answer questions related to the Year 2000 effort, provide information, recommend solutions to agency problems, and refer agencies to sources of information. The Y2K PMO is part of the Strategic Planning Group within the Information Technology Division; Val Asbedian is the Director of SPG and can be reached at 973-0763 or via the internet at val.asbedian@state.ma.us. Feel free to call with any questions or comments you may have.

4.3 PMO Activities

ITD's Y2K PMO provides three types of support services with regard to the Year 2000 Project:

4.3.1 Foster Awareness and Exchange of Technical Information

- The Y2K PMO has identified Year 2000 coordinators in over 150 agencies in the Commonwealth. These points of contact are our primary basis for disseminating information to agencies about our various activities. A list of the agency points of contact is provided in Appendix B.
- The Y2K PMO sponsors monthly meetings of the Massachusetts Government Year 2000 User Group (a meeting schedule appears in Section 7). The User Group meetings, open to all agency and department staff, were established as a forum for agencies to share information and lessons learned regarding Year 2000 remediation and a place to get help with any problems they may be having. As Year 2000 awareness spreads among the agencies, we are seeing steady growth in attendance at Users Group meetings. In April, six agencies were represented. At the September Users Group meeting, 28 agencies were represented. We expect to see a continuing increase in these numbers as more agencies and departments recognize the importance and magnitude of this task.
- The Y2K PMO hosts quarterly Year 2000 Days and vendor days. Our Year 2000 Days provide an additional means of disseminating current information on Year 2000 issues. At our first such event in April, then Lt. Governor Paul Cellucci was one of our speakers, along with the Deputy State Auditor and the State CIO. At our June Awareness Day, speakers from Microsoft, Oracle, Lucent, and Nynex presented information regarding their experiences in achieving Year 2000 compliance in their products. Our most recent Year 2000 Day on October 9th featured a presentation about the newly established PMO, and informational presentations by Digital Equipment Corporation, EDS, and Cambridge Resource Group. Our next Year 2000 Day is scheduled for March 5, 1998.

- Each issue of the quarterly Information Technology Bulletin contains material about the Year 2000, starting with the Winter 1997 issue. The IT Bulletin is also available on the Web at <http://www.state.ma.us/itd/bulletin/>.
 - The Y2K PMO maintains a Year 2000 Web site for Project information and useful links. The URL for this site is <http://www.magnet.state.ma.us/y2k>.
 - In April, ITD published "Year 2000, Meeting the Challenge", a reference book for the agencies. Included in this publication were:
 - an in-depth description of the Year 2000 problem;
 - a timeline for the Commonwealth's Y2K Action Plan; and
 - a number of different reference lists such as web sites, blanket vendors, dates of User Group meetings, date standards for the Commonwealth, and contract guidance.
- To date, we have had requests for over 1500 copies of the book and additional requests are still coming in. This document is a second edition of the "Year 2000, Meeting the Challenge" book. It focuses on the activities agencies should be involved in today if they are to meet the Year 2000 challenge and provides updated reference lists. Other volumes of this document containing timely Year 2000 information and guidance will be published in the future.
- The Y2K PMO posts much of the information in its "Year 2000, Meeting the Challenge" book on the Internet. The web site also provides links to other web sites with helpful information, and frequently asked questions. The address for the Year 2000 site is www.magnet.state.ma.us/y2k/.

4.3.2 Provide Coordination and Support

- The Y2K PMO maintains a library of Year 2000 information from sources like the federal government and other states. These resources include guidelines and formats for assessments, inventories and plans. Articles of interest are also available and may be copied. The library is currently housed in a file cabinet just inside the door and next to the Receptionist in Room 801 at One Ashburton Place.
- To assist agencies needing to accelerate their efforts, the PMO organized a September workshop which focussed on Year 2000 project management and assessment issues necessary for an effective Year 2000 project launch. This workshop drew on the direct experiences of both the Department of Employment and Training and also the Department of Revenue.
- Staff members in the Y2K PMO can provide technical assistance in selecting tools for Year 2000 fixes. Through the User Group we will acquire and disseminate information regarding agency's experiences with vendors and products.
- The Y2K PMO staff can also provide planning assistance, as needed, in preparing or reviewing agency assessments and plans for addressing the Year 2000 challenge.
- The Y2K PMO will continue to publish statewide Year 2000 standards like the material in Section 6, as well as other standards like the Commonwealth Standards and Guidelines for Information Technology which address hardware and software configurations (see <http://www.magnet.state.ma.us/itd/standard/>). The purpose of these standards is to achieve a level of statewide consistency that ensures the interoperability of our systems both internally and externally. They also ensure that new IT investments are Year 2000 compliant.

4.3.3 Monitor Statewide Efforts and Progress

- The Y2K PMO is in the process of developing and maintaining a database to track Year 2000 assessment, planning, validation and deployment activities by agency and the compliance status of Commonwealth mission-critical systems. The database will facilitate data collection and progress monitoring.
- In July, the Y2K PMO staff embarked on an effort to visit over 100 Commonwealth agencies to ascertain the status of their Year 2000 projects and to identify the Commonwealth's mission-critical systems. The interview process has proved to be an effective means of introducing the PMO to agencies, to remind agencies to include their PBX's and other embedded systems in their projects, to personally encourage agencies to attend User Group meetings, and to identify major concerns regarding the Year 2000 initiative. The information collected from the interviews will be used to determine the level of effort and resources required to achieve compliance, establish a baseline for measuring future progress, and identify risk areas.

5 Auditor's Survey

Last April, the Office of the State Auditor mailed a survey to over 600 state and local agencies and authorities in Massachusetts cities and towns. The purpose of the survey was to provide these organizations with a self-assessment tool to indicate their readiness to achieve compliance and to collect enough information to determine a snapshot of the Commonwealth's compliance status. In addition, the survey was intended to help determine the progress that has been made so far, define the scope of the challenge on a statewide basis and determine the resources and support that will be necessary to successfully complete conversion or replacement efforts.

The Office of the State Auditor entered the results in a database and are in the process of evaluating these results. A report from that office is expected to be published late October.

The results of the Auditor's survey can be obtained at <http://www.magnet.state.ma.us/sao/edpl.htm>. These results serve as a reminder that much remains to be done in order to reach our Year 2000 compliance goal. The deadline for this project is immovable – Secretary Baker's letter (see page 1-3) serves to emphasize that this is a high priority initiative.

6 Standards and Contract Guidance

6.1 Date Standards

The Massachusetts Government User Group has defined Year 2000 compliance thus:

"Year 2000 compliant means information technology that accurately processes date/time data (including, but not limited to, calculating, comparing, and sequencing) from, into, and between the twentieth and twenty-first centuries, and the years 1999 and 2000 and leap year calculations. Furthermore, Year 2000 compliant information technology, when used in combination with other information technology, shall accurately process date/time data if the other information technology properly exchanges date/time data with it."

National and international standards organizations such as NIST and ISO are recommending date standards that use a four-digit year where a two-digit century precedes, and is contiguous with, a two-digit year-of-century (e.g. 1999, 2000, etc.). The federal government has adopted this standard for the purposes of electronic data interchange in any recorded form among U.S. Government agencies. The Commonwealth of Massachusetts is also adopting this standard for the purpose of electronic data interchange among its agencies.

The international standard date notation is CCYYMMDD where CC=century, YY=year, MM=month and DD=day. For example, August 4, 1997 would be "19970804"; February 29, 2000 would be "20000229". This notation is becoming increasingly popular and is likely to become a de-facto standard. Commonwealth agencies are strongly advised to use this notation for date representation.

6.2 Sample Year 2000 RFR Language

OSD and ITD have jointly agreed on the definition for Year 2000 Compliance and language for use in RFRs. The Year 2000 issue must be considered in all procurements that include products, services and systems that use day/date data. Below is the RFR language for the Year 2000 issue for new procurements.

"The contractor represents and warrants that the information technology for this contract is year 2000 compliant. Year 2000 compliant means information technology that accurately processes date/time data (including, but not limited to, calculating, comparing, and sequencing) from, into, and between the twentieth and twenty-first centuries, and the years 1999 and 2000 and leap year calculations. Furthermore, Year 2000 compliant information technology, when used in combination with other information technology, shall accurately process date/time data if the other information technology properly exchanges date/time data with it. This warranty shall survive the expiration or termination of this contract."

6.3 Contract Guidance Relating to Interfaced Systems

Agencies entering into contracts not involving the purchase of a product or service per se, but contracting to interface an existing system with the system of an outside entity, may wish to consider the following language:

"The contractor represents and warrants that this system and all interfaces to this system that the contract is providing, including but not limited to interfaces with other systems and data entry interface for this system, are year 2000 compliant. Year 2000 compliant means information technology that accurately processes date/time data (including, but not limited to, calculating, comparing, and sequencing) from, into, and between the twentieth and twenty-first centuries, and the years 1999 and 2000 and leap year calculations. Furthermore, Year 2000 compliant information technology, when used in combination with other information technology, shall accurately process date/time data if the other information technology properly exchanges date/time data with it. This warranty shall survive the expiration or termination of this contract."

6.4 Additional Protections for Large Scale or Especially Important Systems

Some contracts may require additional clauses because the contract involves a higher risk of loss for the Commonwealth if the underlying system is not year 2000 compliant. For instance, an agency entering into contracts for mission critical systems, date sensitive applications or large scale deployments, may wish to include additional contract language that requires testing to prove year 2000 compliance prior to acceptance. This language should be closely tailored to the specific contract. It may also be necessary to include language in these types of contracts that requires proof of insurance or some other guarantee, such as performance bonds, in the event of Commonwealth losses due to non-compliance.

6.5 Year 2000 Activity for Statewide Contracts

OSD is proceeding with efforts so that all IT contracts will be Year 2000 compliant. The new PBX contract has compliance provisions, and all other contracts will have these provisions in the future. All new statewide contracts from this date forward will have requirements for year 2000 compliance for all products, services and systems. Existing contracts will be amended at renewal time. Until then, ordering departments need to specify the year 2000 compliance requirement with all orders and requests for quotes.

6.6 Current Contracts

OSD is proceeding with efforts so that all products and services purchased on IT statewide contracts are Year 2000 compliant. OSD is requiring a Year 2000 amendment on all statewide IT contracts at renewal time. Until that time we have requested that all vendors voluntarily offer an additional Year 2000 warranty on the following contracts:

- PC Network and Integrators Contract, 6/30/98 renewal.
- IT Consulting Contract, 6/30/98 renewal.
- Mid-Range Contract, pricing extended to 8/20/98 and services to 6/30/99.

6.7 Year 2000 Warranty for New Contracts

Any new statewide IT contracts after March 1997 will have the Year 2000 warranty included. The new PBX contracts ITT01, ITT02 and Oracle contract ITM01 have this compliance provision.

6.8 Purchasing Guidance

We recommend for new IT purchases of product and services that the attached list is checked to verify your Contractor has signed an additional Year 2000 warranty that is acceptable to the Commonwealth. A copy of this signed statement is available from the vendor. If your vendor is not on the list, ask the contractor to sign an additional Year 2000 warranty before committing to any new work. A sample warranty statement is included here.

Any IT project should be evaluated for the risk of loss due to Year 2000 Issues. If the risk is high for mission critical or date sensitive applications then you may want to seek additional protections such as:

- Requiring addition tests to prove Year 2000 compliance before acceptance.
- Proof of insurance or some other guarantee such as penalties or performance bonds.
- Statewide IT Contract Managers

Please direct any questions regarding Year 2000 issues to the Contract Manager:

- PC Desktop and Integrator Contract, Consulting Contract:
Gerry Ostrer (617)-727-7500 x206, gerry.ostrer@state.ma.us

- Mid Range Contract:
Jerry Polcari (617)-727-7500 x321, jerry.polcari@state.ma.us
- PBX Contracts:
Sal Tormame (617)-727-7500 x204, sal.tormame@state.ma.us.

6.9 Year 2000 Warranty (Recommended Sample)

This sample Year 2000 Warranty is recommended for all RFRs and purchases with vendors who are listed as not signing an additional Year 2000 Warranty acceptable to the Commonwealth.

The contractor represents and warrants that the product(s) and/or service(s) for this contract are Year 2000 compliant. Year 2000 compliant means information technology that accurately processes date/time data (including, but not limited to, calculating, comparing, and sequencing) from, into, and between the twentieth and twenty-first centuries, and the years 1999 and 2000 and leap year calculations. Furthermore, Year 2000 compliant information technology, when used in combination with other information technology, shall accurately process date/time data if the other information technology properly exchanges date/time data with it. This warranty shall survive the expiration or termination of this contract.

Contractor: _____

Signature: _____

Title: _____

Date: _____

6.10 List of Vendors

A list is provided here of all vendors that have executed a 2000 warranty that is acceptable to the Commonwealth. Updates to this list will be provided on the OSD home page at:

<http://www.magnet.state.ma.us/osd/memo/memotoc.htm>.

ORACLE CONTRACT FOR PRODUCTS AND SERVICES

VENDOR	Executed Acceptable Y2K Warranty
ORACLE CORPORATION	YES

MID-RANGE SYSTEMS AND SERVICES CONTRACT

VENDOR	Executed Acceptable Y2K Warranty
ATT GLOBAL SOLUTIONS ¹	NO
DATA GENERAL	YES
WANG LABORATORIES	YES
BULL NH INFORMATION SYSTEMS	YES
DIGITAL EQUIPMENT CORPORATION	YES
IBM	YES
PRAXIS	YES
THE FUTURE NOW	YES
UNISYS	YES
TOTALS	8 OF 9 VENDORS

¹ ATT Global was not offered a contract extension

PC AND NETWORK INTEGRATOR CONTRACT

VENDOR	Executed Acceptable Y2K Warranty
AMERIDATA now (GE CAPITAL ITS)	YES
BAYSTATE DATA SYSTEM	YES
CBE TECHNOLOGIES, INC.	YES
CHARTER SYSTEMS (NE SYS)	YES
CIC SYSTEMS	YES
COMPUCOM SYSTEMS, INC.	YES
COMPUTER MARKETPLACE	YES
DECISION ONE	YES
FCP TECHNOLOGIES/ENTEX	YES
I-NET	YES
MICROLAND	YES
PRAXIS GROUP	YES
RETRO-FIT	YES
SIGMA TECH	YES
TERMINAL EXCHANGE	YES
VANSTAR	YES
TOTALS	16 OF 16 VENDORS

CONSULTING CONTRACT

VENDOR	Executed	VENDOR	Executed
ADEPT	YES	LENCO COMPUTER CONSULTING	YES
ADVANCED MODULAR SOLUTIONS INC.	NO	MADENTECH CONSULTING	YES
AMDAHL	NO	MAXIMUS	NO
AMERICAN MANAGEMENT SYSTEMS	NO	MEHTA CORP	YES
ANALYSIS & TECHNOLOGY	YES	MICHAEL ANTHONY ASSOC.	YES
ANALYTICAL SYSTEMS ENG. CORP.	YES	MOSAIC DATA SYSTEM	YES
ANDERSON CONSULTING	NO	NETWORK SIX	YES
APPLIED GEOGRAPHICS	YES	NOBLE SOFTWARE SOLUTIONS	YES
BUSINESS PROCESSING TECHNOLOGIES	YES	PERFORMANCE DEVELOPMENT CORP.	YES
C & C DATA PROC. ASSOC.	YES	PINKERTON	YES
C.W. COSTELLO	YES	QUADRANT CORP.	YES
CAMBRIDGE RESOURCE GROUP	YES	SAPIENT	NO
CENTECH	YES	SCIENCE APPLICATION INT'L CORP	YES
CHARTER SYSTEMS	YES	SDI/ SYSTEMS DEVELOPMENT INC.	YES
CITY/STATE COMPUTER SERVICES	YES	SOFTWARE AG	YES
CLAREMONT TECH GROUP	NO	SOURCE ONE SOLUTION	YES
COMMAND SYSTEM	YES	SUMARIA SYSTEMS INC.	YES
COMMONWEALTH TECHNOLOGIES	YES	SYBASE INC.	NO
COMMUNICATIONS ANALYSIS ASSOC.	YES	SYSTEM RESOURCES CORP.	YES
COMPUCOM SYSTEMS, INC.	YES	SYSTEMS ENGINEERING, INC	YES
CONNOLLY INFORMATION SERVICES	YES	SYTEL, INC.	YES
CONTRACT SOLUTIONS INC.	NO	THE BSC GROUP	YES
COOPERS & LYBRAND	NO	THE CLARITY GROUP	YES
D.R. WHITE COMPUTER SERVICES	NO	THE PRAXIS GROUP	YES
DATABASE TECHNOLOGIES INC.	YES	THE REGISTRY INC.	YES
DELOITTE & TOUCHE	YES	UII CORPORATION	YES
DIGITAL EQUIPMENT CORP.	YES	UNICOM / MICROAGE	YES
DMR TRECOM	NO	UNISYS CORP	YES
EDP CONTRACT SERVICES	YES	UNIVERSAL SYSTEMS INC.	NO
EDS CORPORATION	YES	UTOPIA INC.	YES
ELIASSEN GROUP	YES	WANG LABS	YES
FCP TECHNOLOGIES/ENTEX	YES	WATERFIELD TECHNOLOGY GROUP	YES
GIS TRANS.	NO	WHITRIDGE ASSOC.INC.	YES
IBM CORP.	YES	WT CHEN	YES
INTERGRAPH CORPORATION	YES	ZEITECH	YES
INTERLEAF INC.	NO		
INTERMETRICS INC	YES		
KPMG PEAT MARWICK LLP	NO		
TOTALS		56 OF 73 VENDORS	

7 Year 2000 Agency Information Resources

A number of resources exist to provide useful Year 2000 information for all levels of agency staff. This chapter includes a list of these resources. Some resources are specific to Massachusetts, like the monthly User Group meetings and the quarterly Year 2000 days. Others are more general: the library established in the Y2K PMO office, and web sites.

7.1 Massachusetts Government Year 2000 User Group

The Y2K PMO has launched a Massachusetts Government Y2K User Group. Monthly meetings are held on the first Tuesday of the month in the 21st floor conference room, One Ashburton Place, Boston; the schedule of meeting dates appears below.

- October 14, 1997
- November 4, 1997
- December 2, 1997
- January 13, 1998
- Feb 10, 1998
- Mar 3, 1998
- Apr 7, 1998, tentative

For more information about the User Groups, call Marcia King (617) 973-0711.

7.2 Year 2000 Web Sites

The first edition of this publication, published last April, included a list of Year 2000 web sites that can be of use to agencies in addressing many Year 2000 issues. In this edition, we have included an expanded list as well as a description and evaluation of some of our favorites.

The following list of selected websites is grouped according to various categories. The evaluations are strictly the opinion of the writer! Also, keep in mind that the Internet is a very dynamic environment. While these sites existed at one time as described below, they may no longer exist or may have been changed significantly. For sites which provide product evaluations or product Y2K compliance information, it is strongly recommended that readers check these sites regularly since they are updated frequently.

The Year 2000 Problem

Facing the Year 2000 Problem
<http://www.comlinks.com/mag/cirep.htm>

Year 2000, Meeting the Challenge
<http://www.magnet.state.ma.us/Y2K/>

Project Management

Awareness, Assessment, and Audit Tools
<http://www.state.id.us/y2k/audit.htm>

Good 'how to' with steps for each of the Y2K project phases

Year 2000 Best Practices

<http://infosphere.safb.af.mil/~jwid/fadl/world/fedguide.htm>

Great descriptions of each phase of Y2K project

Software Questionnaire

<http://www.state.id.us/y2k/question.htm>

Nice list of questions to help determine extent of Y2K problem and help organizations that haven't done an inventory or assessment get started

Solutions (e.g., windowing, expanding date field, etc.)

MITRE - Y2K Solutions

http://www.mitre.org/research/cots/Y2K_SOLUTIONS.html

Nice description of various solutions to the Y2K problem

A Bridge Over Your Year 2000 Problem

<http://www.itpolicy.gsa.gov/mks/yr2000/chan.htm>

Interesting article providing some philosophy regarding the Y2K and some potential solutions.

Major Software Providers

Microsoft

<http://www.microsoft.com/cio/articles/year2000faq.htm>

Oracle

<http://www.oracle.com/support/html/2000.htm>

Computer Associates

<http://www.cai.com/products/ca2000/y2000cl.htm>

Banyan*

<http://www.banyan.com>

IBM

<http://www.ibm.com/IBM/year2000/>

DEC

<http://www.software.digital.com/year2000/status.html>

*Banyan's website currently has no Year 2000 information, however, the site is included here so that users may check periodically for updates.

Tools

Florida - Year 2000 Tools and Training

<http://mail.irm.state.fl.us/yr2ktools.html>

Provides a list of Y2K software tools grouped by mainframe, midframe, language, PC, and other types of tools.

U.S. Army

<http://www.army.mil/army-y2k/tools/tools~1.htm>

Provides links to three lists of tools: 1) Software slicing tools, 2) Dataname rationalization tools, 3) Other year 2000 related tools. Each list includes vendor name and address, language, platform, classification, and type. Lists of tools are based on vendor descriptions, not independent user evaluations.

Defense Information Systems Agency
http://www.mitre.org/research/y2k/docs/TOOLS_CAT.html

Has links to a number of tools; provides capability to submit entries to the catalog or make corrections. Site also includes search capability for particular tool.

Federal Experiences with Year 2000 Tools

<http://www.itpolicy.gsa.gov/mks/yr2000/toolexp.htm>

Unfortunately, as of this evaluation (7/30/97), only one product is evaluated, System Vision 2000 and PM/SS; this site, however, is probably worth checking periodically to see if other products have been added.

Vendors (tools, consulting)

MITRE - List of Vendors
<http://www.mitre.org/research/y2k/docs/VENDORS.html>

Long list of vendors offering Y2K tools and/or consulting services; some have links to vendor web sites, evaluations, links for additional information. MS Word file available or download with the vendor information. Site is updated weekly.

ITAA's Buyers Guide
<http://www.ita.org/yr2000bg.htm>

Contains a good description of what to look for in evaluating a service provider to do the Y2K conversion.

Vendor Compliance (software & hardware)

The Hidden Challenges of Managing Vendors and Their Year 2000 Compliance
<http://www.year2000.com/archive/vendors.html>

MITRE - List of COTS vendors and the status of their Y2K compliance
http://www.mitre.org/research/cots/COMPLIANCE_CAT.html

Large list of vendors; site allows search by vendor name or browsing through list. MS Word file of COTS vendor information is available to download. Seems to be very comprehensive site. Includes hardware and software vendors.

MITRE - Y2K Compliance Information
http://www.mitre.org/research/cots/COMPLIANCE_INFO.html

Good site with a number of links related to Y2K compliance; includes list of questions to ask to determine compliance, checklist, and other compliance language recommendations.

MITRE - Y2K Compliant BIOS

http://www.mitre.org/research/cots/COMPLIANT_BIOS.html

Appears to have a very thorough description of what the PC BIOS problem is, how to test for it, and links to sites which will help users to determine what they need to do for their PC's.

Commercial Off-The-Shelf Software

<http://www.monmouth.army.mil/y2k/cots.htm>

Table of various COTS products listing version numbers, whether they are compliant, information source, and comments.

Digital Equipment Corporation - Year 2000 Product Status

<http://www.software.digital.com/year2000/status.html>

Has download-able list of DEC products and their Y2K status. Have not downloaded list but have heard it is quite extensive. According to the web site, the file includes the name of the product, previously used names where applicable, the platform the product is used with (hardware architecture and operating environment), the currently shipping version and its Year 2000 status, the version which is planned to be Year 2000 ready and the projected release date, and the date of the latest status update for the product .

PCs

PCs and the Year 2000 Problem

<http://www.state.id.us/y2k/pcs.htm>

Good write-up geared to Y2K PC issues

MITRE - Y2K Compliant BIOS

http://www.mitre.org/research/cots/COMPLIANT_BIOS.html

Appears to have a very thorough description of what the PC BIOS problem is, how to test for it, and links to sites which will help users to determine what they need to do for their PC's.

RighTime Y2K Home Page

<http://www.righitime.com/>

Includes information and free tool for checking your PC BIOS to see if it is Y2K compliant and, if not, to correct it.

National Software Testing Laboratories - YMARK2000

http://www.nstl.com/html/ymark_2000.html

YMARK 2000 is NSTL's free utility to determine if a PC will adequately support dates after December 31, 1999.

Legal Issues

Legal Issues Confronting The Federal Government And The State Governments Due To The Year 2000 "Millennium Bug"

<http://www.llgm.com/FIRM/article4.htm>

Good, but lengthy, article about legal and other issues facing the federal and state governments.

Massachusetts – Standards and Contract Guidance

<http://www.state.ma.us/y2k/standards.htm>

Definition of year 2000 compliance and sample year 2000 RFR language

Legal Issues Concerning the Year 2000 "Millennium Bug"

<http://www.year2000.com/archive/NFlegalissues.html>

A good explanation of the legal issues surrounding the year 2000 bug. Contains references to several other web sites and documents.

Data Exchange

Federal Agency/State Data Exchange Points of Contact

<http://www.itpolicy.gsa.gov/mks/yr2000/fedagen.htm>

List of Points of Contact for approximately 50 Federal Agencies for data exchange

Date & Time Standards

National Institute of Standards and Technology Y2K Web Site

<http://www.nist.gov/y2k/>

Includes free software for finding dates that can be downloaded

A Summary of the International Standard Date and Time Notation

<http://www.ft.uni-erlangen.de/~mskuhn/iso-time.html>

Interesting discussions of world-wide date and time standards.

Embedded Systems

Joint Position Statement - Embedded Systems and Manufacturing Companies

<http://www.effectivebydesign.com/nutmeg/embedsys.html>

The Millennium Problem in Embedded Systems

<http://www.iee.org.uk/2000risk/Welcome.html>

Discussion of the year 2000 problem as it relates to the microprocessors found in fax machines, elevators, etc.

The Year 2000 and Embedded Systems: For Most Businesses, This Does Not Have to be a Major Problem
<http://www.year2000.com/archive/embedded.html>

Year 2000 Best Practices Handbook: Firmware for Facilities Infrastructure Best Practices
<http://www.state.mn.us/ebranch/admin/ipo/2000/sec8.html>

Testing

Software Testing Institute – The Year 2000
<http://www.ondaweb.com/sti/year2000.htm>

A Framework For Testing Year 2000 Application Conversions
<http://www.year2000.com/archive/chaabouni.html>
Presents a framework and a comprehensive summary of testing methodologies and criteria for year 2000 conversion efforts.

Avoiding Zero Return On Your Investment
<http://www.wsj.com/public/current/articles/SB859503975781248500.htm>

Test Strategies for Year 2000 Project
<http://www.ftch.net/~evolutif/articles/y2kstrat.html>

Massachusetts – Related Web Sites

Information Technology Division (ITD) Year 2000 site
<http://www.state.ma.us/y2k/index.htm>

Executive Office of Administration & Finance
<http://www.EOAF.state.ma.us>

DOR's Division of Local Services
<http://www.state.ma.us/dls>

Operational Services Division
<http://www.state.ma.us/osd/osd.htm>

Other States – Y2K Web Sites

Alaska	http://www.state.ak.us/local/akpages/ADMIN/info/yr2000.htm
Arizona	http://www.gita.state.az.us/y2k.htm
Arkansas	http://www.state.ar.us/dis/y2k/y2kintro.htm
California	http://www.year2000.ca.gov
Florida	http://mail.im.state.fl.us/yr2000.html
Idaho	http://www.state.id.us/y2k/index.htm
Indiana	http://www.ai.org/dpoc/index.html
Iowa	http://www.state.ia.us/government/its/century
Kansas	http://www.state.ks.us/public/kirc/yr2000.htm

Kentucky	http://www.state.ky.us/year2000/index.htm
Massachusetts	http://www.state.ma.us/y2k/index.htm
Minnesota	http://www.state.mn.us/ebranch/admin/ipo/2000/2000.html
Mississippi	http://www.its.state.ms.us/yr2000/index.html
Missouri	http://www.state.mo.us/oit/plans/t_plan/p5.htm
Montana	http://www.mt.gov/isd/year2000
Nebraska	http://www.das.state.ne.us/das_cdp/rfp/rfp.htm
New Hampshire	http://www.state.nh.us/oitm/y2k.htm
New Jersey	http://www.state.nj.us/otis/year2000.htm
New York	http://www.irm.state.ny.us/yr2000/yr2000.htm
North Carolina	http://year2000.state.nc.us
Ohio	http://www.state.oh.us/opp/OPP-POL.htm
Oregon	http://www.state.or.us/IRMD/y2k/year2k.htm
Pennsylvania	http://www.state.pa.us/Technology_Initiatives/year2000/index.html
Rhode Island	http://www.iori.state.ri.us/y2k/index.html
Texas	http://www.state.tx.us/year2000
Utah	http://www.governor.state.ut.us/sitc/yr2000.htm
Virginia	http://www.cim.state.va.us/cdc/INDEX.htm
Washington	http://www.wa.gov/dis/2000/y2000.htm
West Virginia	http://www.state.wv.us/y2k/default.htm
Wisconsin	http://badger.state.wi.us/y2k

Other Sites & Articles of Interest

Official Y2K Web Site
<http://www.year2000.com>

Year 2000 Archives
<http://www.year2000.com/y2karchive.html>

Ten Management And Ten Legal Pitfalls Regarding The Year 2000 Computer Problem That You May Not Have Considered, YET!
<http://www.wsrg.com/BeyondA.htm>

Fascinating article although it may not be of real practical value to state Y2K coordinators; great reading, though.

Results of Year 2000 Limerick Contest
<http://www.year2000.com/archive/limerick.html>

For a little light reading, this is a great site. DeJeager ran a limerick contest and published the results. Very funny.

Information Technology Association of America (ITAA) Y2K Page
<http://www.ita.org/year2000.htm>

This is another site with good, comprehensive information, particularly about vendors and products.

National Association of State Information Resource Executives (NASIRE) - Y2K
<http://www.nasire.org/year2000/index.html>

NASIRE Publications Order Form

<http://www.nasire.org/publications/order2.html#anchor1265869>

Order form for Y2K reports and video describing how state governments can meet the Y2K challenge.

Info. Tech. Association of America

<http://www.ITAA.org>

Gartner Group

<http://www.Gartner.com>

Computer Tech. Research Corp.

<http://www.CTRCORP.com>

Federal Government Services Admin.

<http://www.ITpolicy.gsa.gov/mks/yr2000/y201toc1.htm>

7.3 Y2K PMO Library

The Y2K PMO has begun a collection of documents available to any agency staff members to read and/or copy. The Library is currently housed in a file cabinet inside the door of Room 801 at One Ashburton Place. A list of the types of information in the library follows:

☐ **Documents**

- **Success Stories** - Descriptions of Y2K projects at other organizations
 - Bank of Boston Presentation

☐ **Consulting Companies** - Marketing brochures

- Computer Professionals, Inc
- Costello Associates
- Digital Equipment Corporation (DEC)
- GTE
- IBM
- Performance Development
- Keane
- Global Software
- Cambridge Resources Group
- DSD Labs
- System Resources
- Unisys
- Intermetrics
- Applied Business Technologies Corp
- Systems and Computer Technology, Inc.
- ISN Group

- ☐ **Federal Government** - A number of articles from Government Computing News Articles relative to the Federal Y2K effort, including:
 - NASIRE survey
 - DoD/Air Force
 - Y2K Management Plan
- ☐ **State Government** - Articles relative to other states' Y2K effort, including:
 - Florida
 - New York
 - Pennsylvania
- ☐ **Letters** - Y2K readiness letters from vendors
 - Microsoft
 - Banyan
 - Netscape
 - Corel
 - Computer Associates
- ☐ **Y2K Conferences** - Agendas, highlights from a number of conferences
- ☐ **Product Reviews** - Written reviews of Y2K software products
 - HotDate
- ☐ **User Group Meetings** - Agendas, notes, etc. from User Group meetings
- ☐ **Year 2000 (Awareness) Days** - Agendas, presentations, minutes from Awareness Days
 - 12-Jun-97
 - 9-Oct-97
- ☐ **Other:**
 - ITAA Y2K Literature
 - PC's & the Year 2000
 - Y2K Project Planning
 - General Articles of Interest
 - Frequently Asked Questions
 - Legal Issues
 - Audit Guidelines
 - RFP's, Compliance Agreements, Warranties
 - Checklist
 - ISO Date Standard
 - Web Sites

7.4 Partial List of COTS and their Y2K Compliance Status

A number of software products are common to many of the agencies within the Commonwealth. In order to share information and avoid the need for agencies to reinvent the wheel, the more common products are listed below with their compliance information.

- ★ **CAUTION:** Unless otherwise noted, the information in the table below is not 'official' information obtained in writing directly from the vendors, but has been obtained from various web sites. It is strongly recommended that Y2K project staff regularly check some of the web sites listed above to get the latest information

COTS Compliance Status			
Vendor	Product	Compliance Status	Source
Microsoft	MS-DOS (FAT 16)	Good 'til 2108	Letter received by ITD
	Windows 3.x (FAT 16)	Good 'til 2108	
	Windows '95	Good 'til 2108	
	Windows for Workgroups (FAT 16)	Good 'til 2108	
	Windows NT	Good 'til at least 2108	
	Visual FoxPro	9999	
	Access 95 (2-digit "YY" shorthand)	1999	
	Access (95 4-digit year and 97)	2029	
	Excel (95 and higher)	At least 2019	
Banyan		Full testing to be completed and report issued by mid-1997	Letter received by ITD
Netscape	Navigator 2.02, 3.0, 3.01	Compliant provided underlying operating system of host machine is compliant	

The Massachusetts Information Technology Center (MITC) in Chelsea has been compiling an inventory of all 3rd party IBM and non-IBM software in use at their facility and the compliance status of each. The following is the latest list from MITC:

IBM Software								
Product #	Software	Level	Ser #	Year 2000 Release Needed	New Product #	Product Name	Sched Upgrade	Complete
5668-854	ACF/NCP	4.3.2	DH572	V4R3M1 OK			N/A	
5688-231	ACF/NCP V6	6	51600	OK			4QTR97	
5665-338	ACF/SSP	3.7.0	79303	V3R9		Ordered	2QTR97	
5665-338	ACF/SSP	3.7.0	AF020	V3R9		Ordered	2QTR97	
5685-085	ACF/VTAM V3	3.4.2	32747	V3R3 OK			N/A	
5685-085	ACF/VTAM V3	3.4.2	37641	V3R3 OK			N/A	
5688-216	AD/Cycle C/370	1.1.0	60293	V1R2			4QTR97	
5688-197	COBOL for MVS	1.1.0	60291	V1R2			4QTR97	
5688-194	AD/Cycle CODE/370	1.1.0	60290	V1R2			4QTR97	

IBM Software								
Product #	Software	Level	Ser #	Year 2000 Release Needed	New Product #	Product Name	Sched Upgrade	Complete
5688-198	LANG ENV	1.1.0	60292	V2R2	5688-188	C/370 Library	4QTR97	
5668-962	ASSEMBLER	2.1.0	74767	V1R2	5696-234	HLASM New version installed	1QTR97	ü
5668-962	ASSEMBLER	2.1.0	92764	V1R2	5696-234	HLASM New version installed	1QTR97	ü
5665-264	BDT	2.1.0	CQ813	V2R1 OK			N/A	
5695-046	Bookmanager	2	A0982	V1R3			4QTR97	
5655-121	C/C++	3	39149	V3R2			4QTR97	
5665-403	CICS V2.1	2.1.2	HG816	V4R1	5665-018	CICS/ESA V4	4QTR97	
5665-403	CICS V2.1	2.1.2	ER815	V4R1	5665-018	CICS/ESA V4	4QTR97	
5655-018	CICS/ESA V4	4.1	17694	V4R1 OK			N/A	
5655-018	CICS/ESA V4	4.1	18026	V4R1 OK			N/A	
5740-CB1	Cobol	2.4.1	47335	Not Supported			4QTR97	
5668-958	COBOL II	4	74766	V1R2	5688-197	COBOL for MVS **	TBD	
5668-958	COBOL II	4	EG938	V1R2	5688-197	COBOL for MVS **	TBD	
5685-DB2	DB2	3.3.2	60776	V3R1 OK			N/A	
5685-DB2	DB2	3.3.2	GM763/68791	V3R1 OK			N/A	
5665-327	DFDSS	2.5.2	79302				4QTR97	
5665-XA3	DFP	3.5	ED211	V1R2	5695-DF1	DFSMS/MVS **	TBD	
5665-XA3	DFP	3.5	EL921	V1R2	5695-DF1	DFSMS/MVS **	TBD	
5665-370	DITTO	1.3.0	CA044	V1R16	5655-103	Cancelled		
5655-103	DITTO ESA		0040909	OK		Installed 1Q97		ü
5740-XC5	DMS/CICS	4	22892	V1R5			4QTR97	
5655-257	DSF	1.16	04126	V1R16 4QTR96			4QTR97	
5658-260	EREP		07926	OK Special Handling			N/A	

IBM Software								
Product #	Software	Level	Ser #	Year 2000 Release Needed	New Product #	Product Name	Sched Upgrade	Complete
5748-FO3	Fortran	1.4.1	82605	V2R5	5668-806		4QTR97	
5665-356	GDDM/MVS	2.1.0	BH226	V2R3			4QTR97	
5668-812	GDDM/PGF	2.1	AO312	V2R1			4QTR97	
5695-047	HCD			V5R1	5655-068		4QTR97	
5798-DXQ	ICFRU	1	HD612	4Q96			4QTR97	
5685-054	ISPF V3	3.5	32746	V3R5 OK			2QTR97	
5685-054	ISPF V3	3.5	37640	V3R5 OK			2QTR97	
5665-402	ISPF/PDF	3.5	GB673	V4R1	5655-042	ISPF	Testing	
5665-402	ISPF/PDF	3.5	GJ186	V4R1	5655-042	ISPF	Testing	
5695-047	JES2 MVS/SP V4	4.2.0	A03K9	V5R1	5655-068	MVS/ESA SP JES2 Version 5 **	TBD	
5695-047	JES2 MVS/SP V4	4.2.0	A1B4F		5655-068	MVS/ESA SP JES2 Version 5 **	TBD	
5695-137	MQSeries	V1.1.4	A2DYD	V1R1M3 OK			N/A	
5685-108	NETVIEW V2	FTP 2	47944	V2R2			4QTR97	
5695-039	RACF V2	V2	A2JGJ			OK	Apr-97	ü
5695-039	RACF V2	V2	A2L1J			OK	Apr-97	ü
5665-362	Netview MVS/XA	1.3.0	AR352	V3R1	5665-362		4QTR97	
5665-362	Netview MVS/XA	1.3.0	BQ030				4QTR97	
5665-333	NPM	1.3	61489	V1R6			4QTR97	
5665-333	NPM	1.3	AF018	V1R6			4QTR97	
5668-909	OS PL/I V2	2.3.0	DB550	OK				
5668-909	OS PL/I V2	2.3.0	DD325	OK				
5665-308	Overlay Gen Lang	1.2.0	BQ152	V1R1M0	5688-191		4QTR97	
5688-190	Page Pr Format Aid	1.1.0	37173	V1R1 OK			4QTR97	
5734-PL3	PL/I	1.5.0	65564	?? Are we still using this		Cancelled	4QTR97	

IBM Software								
Product #	Software	Level	Ser #	Year 2000 Release Needed	New Product #	Product Name	Sched Upgrade	Complete
5734-PL3	PL/1	1.5.0	75632	?		Cancelled	4QTR97	
5665-275	PSF	1.3.1	BH954	V2R2	5695-040		4QTR97	
5740-XXH	RACF	V2R2	46937	OK	5695-039	Cancelled	1QTR97	
5740-XXH	RACF	V2R2	BC010	OK	5695-039	Cancelled	1QTR97	
5665-488	SDSF	1.3.1	BT151	V1R6			4QTR97	
5665-488	SDSF	1.3.1	BX991	V1R6			4QTR97	
5668-949	SMP/E	1.8.2	28829	V1R8M0 OK			N/A	
5668-949	SMP/E	1.8.2	92762	V1R8M0 OK			N/A	
5655-HAL	TCP/IP	3.2	39148	V3R1 OK			N/A	
5685-025	TSO/E V2	2.5.0	9786	V2R5 OK	V2R4 BY 4Q96		N/A	
5685-025	TSO/E V2	2.5.0	13161	V2R5 OK	V2R4 BY 4Q96		N/A	

Non-IBM Software					
Software	Vendor	Version	Year 2000	New Prod	Schedule Upgrade
BEST1/MVS	BGS SYSTEMS	12.8	OK		N/A
CAPTURE/MVS	BGS SYSTEMS	12.8	?		
CMF MONITOR	BOOLE & BABBAGE	4.3	1QTR97		
CL/SUPERSESSION	CANDLE CORP	146	V147		
CL/SUPERSESSION	CANDLE CORP	146	V147		
QUICK REFERENCE	CHICAGO SOFT	4.2	V5.0		
CA-1 TMS	COMPUTER ASSOCIATES	5.1	OK		N/A
EASYTRIEVE/PLUS	COMPUTER ASSOCIATES	6.1	6.2 4QTR97		
FAST DASD	COMPUTER ASSOCIATES	4.4	Cancelled		N/A

Non-IBM Software			Year 2000	New Prod	Schedule Upgrade
Software	Vendor	Version			
PANVALET/MVS	COMPUTER ASSOCIATES	140.01B	V14.3		2QTR97
PANVALET/SPF	COMPUTER ASSOCIATES	140.01B	V14.3		2QTR97
CA-JARS	COMPUTER ASSOCIATES	7.1	4QTR97		
CA-OPTIMIZER MVS	COMPUTER ASSOCIATES	5	V6.0		3QTR97
CA-Unicenter Star MVS(2)	COMPUTER ASSOCIATES		OK		N/A
CA-Unicenter Windows NT	COMPUTER ASSOCIATES		OK		N/A
CA-Unicenter Star Client(5)	COMPUTER ASSOCIATES		OK		N/A
CA-9 RPLUS	COMPUTER ASSOCIATES	5.8.5	Cancelled		N/A
CA-11 AUTORESTART	COMPUTER ASSOCIATES	2.1	V2.2		2QTR97
CA-7 SCHEDULER	COMPUTER ASSOCIATES	3.1	V3.2		2QTR97
CA-APCDOC	COMPUTER ASSOCIATES	1.2	V1.3		N/A
CA-DISPATCH	COMPUTER ASSOCIATES	4.2	Cancelled		
CA-JCLCHK	COMPUTER ASSOCIATES	7.0	OK		N/A
CA-OPERA	COMPUTER ASSOCIATES	3.0	V3.1 1QTR97		
CA-RAPS	COMPUTER ASSOCIATES		Cancelled		N/A
ACCOLADE/CICS	PRAXIS	5	OK		N/A
IMAGINE	PRAXIS	3.1	V3.5		
RISKPAC	COMPUTER SECURITY INSTITUTE		?		
ABENDAID/CICS	COMPUWARE	5.4			
ABENDAID/MVS	COMPUWARE	7.0.2	V8.3		
XPEDITER/CICS	COMPUWARE	6.2			
TEXTDBMS	DATA RETRIEVAL CORP	3.4A	2QTR97		
ADABAS PLEU	LEGENT was GOAL	3.1.5	OK		N/A
APAS/INSIGHT	LEGENT was GOAL	3.2	4QTR97		
FOCUS Data Management	IBI	7.0.5	V7.06		
FOCUS Extended Matrix Rptg	IBI	7.0.5	V7.06		

Non-IBM Software					
Software	Vendor	Version	Year 2000	New Prod	Schedule Upgrade
FOCUS Report Generator	IBI	7.0.5	V7.06		
FOCUS Stat Analysis Pkg	IBI	7.0.5	V7.06		
FDR/DSF/CPK	INNOVATION DATA PROCESSING	R52.33	1QTR97		
TMON/MVS/CICS/VTAM	LANDMARK	1.2	4QTR97		
TMON/VTAM	LANDMARK	1.5	4QTR97		
TMON/MVS/NAVAGRAPH	LANDMARK	1.1.3	4QTR97		
TMON/VTAM/NAVAGRAPH	LANDMARK	1.0	4QTR97		
TMON/DB2/NAVAGRAPH	LANDMARK	2.1	4QTR97		
MULTI-IMAGE	LEGENT	3.0	?		
ZIP PLUS 4	LPC	6.6.0	3QTR97		
ZIP PLUS4 for CICS	LPC	6.6.0	3QTR97		
MXG	MERRILL CONSULTANTS		OK		N/A
MDI GATEWAY	MICRO DECISION	2.0.2	?		
VRO	MOBIUS MANAGEMENT SYS	1.4	4QTR97		
ViewDirect, Adv Print, Rem Job Out	MOBIUS MANAGEMENT SYS		4QTR97		
BEAMIT	MUST SPFTWARE	5.5.0	OK		N/A
EZNOMAD	MUST SPFTWARE	5.5.0	OK		N/A
N2SIDS	MUST SPFTWARE	5.5.0	OK		N/A
NOMAD2	MUST SPFTWARE	5.5.0	OK		N/A
EXCELLINK	ONLINE BUSINESS SYSTEMS	4.0			
SAS	SAS INSTITUTE	6.08	6.06 up		
SAS	SAS INSTITUTE	6.08	6.06 up		
SAS/ETS	SAS INSTITUTE	6.08	6.06 up		
SAS/GRAPH	SAS INSTITUTE	6.08	6.06 up		
SAS/STAT	SAS INSTITUTE	6.08	6.06 up		

Non-IBM Software			Year 2000	New Prod	Schedule Upgrade
Software	Vendor	Version			
SAS/OS/FSP	SAS INSTITUTE	6.08	6.06 up		
ADABAS	SOFTWARE AG	5.3.3	V6.2		
ADABAS ONLINE	SOFTWARE AG	2.3.3	V6.2		
ADABAS NATIVE SQL	SOFTWARE AG	1.5.1	V1.6.1		
COM-LETE	SOFTWARE AG	4.6.1	V5.1		
CONNECT	SOFTWARE AG	3.1.1	V3.3.1		
ENTIRE CONNECT MSDOS	SOFTWARE AG				
NATURAL	SOFTWARE AG	2.2.7	V2.3.11 9/97		
NATURAL FOR DB2	SOFTWARE AG	2.3.3	V2.4.1		
NATURAL CONNECTION	SOFTWARE AG	2.2.7	V2.3		
NATURAL OPTIMIZER	SOFTWARE AG	2.1.5	V2.3.1		
NATURAL SECURITY	SOFTWARE AG	2.2.7	V2.3		
NATURAL VSAM	SOFTWARE AG	2.2.7	V2.4.1		
NET-WORK CTC (2)	SOFTWARE AG		?		
ENTIRE NET-WORK CTC (2)	SOFTWARE AG	1.2.1			
PREDICT	SOFTWARE AG	3.2.3	V3.3.2		
PREDICT CASE	SOFTWARE AG	2.4.1	V2.5.1		
N2O	TREEHOUSE	3.2.1	OK		N/A
PDSFAST	SOFTWARE ENGINEERING	4.3E	OK		N/A
PDSUPDATE	SOFTWARE ENGINEERING	4.3	OK		N/A
DMS/OS LEVEL A	STERLING	8.17	4QTR97		
VOLUME CONFIGURATOR	STERLING	8.17	4QTR97		
VSAM SUPPORT	STERLING	8.17	4QTR97		
DASD SPACE BILLING	STERLING	8.17	4QTR97		
TSO CMD PROCESSOR	STERLING	8.17	4QTR97		
RACF SUPPORT	STERLING	8.17	4QTR97		

Non-IBM Software					
Software	Vendor	Version	Year 2000	New Prod	Schedule Upgrade
TSO/ISPF INTERFACE	STERLING	8.17	4QTR97		
TRACS	STERLING			New Prod 98	
SYNCSORT	SYNCSORT	3.5 & 3.6	OK		N/A
Network Data Mover (NDM)		1.7.2	?		
Database Analyzer	Platinum Technology	2.3	3QTR97		
Log Analyzer	Platinum Technology	1.2	3QTR97		
RC/Query	Platinum Technology	3.4	3QTR97		
RC/Migrator	Platinum Technology	4	3QTR97		
RC/Update	Platinum Technology	4	3QTR97		
Plan Analyzer	Platinum Technology	1.7	3QTR97		
Batch Processor	Platinum Technology	2.7	3QTR97		
JOB HISTORY SYSTEM	SYSTEMWARE	3.5	3.3 up		
OUTBOUND SNA (0B37OHL)	Stile		OK		N/A
OUTBOUND PC (4 DOS/Wind,1 OS/2)	Stile		OK		N/A
ESIMAP	21st Century Innovations		OK		N/A

For the past three years, ITD, along with several other departments within the Executive Office of Administration and Finance, has been involved in the coordination of an Information Technology "Big Buy" for Commonwealth departments. The Big Buy is a centralized effort which pools together information technology equipment orders across state departments in order to obtain volume discounts from vendors. The following provides the Year 2000 compliance status for the equipment purchased in each year of the Big Buy.



CAUTION: The compliance status reported for the Big Buy equipment is based on tests performed by the Original Equipment Manufacturer (OEM); there are *NO* guarantees that this equipment will be compliant after it has been configured for specific environments. A number of factors can interfere with a PC's internal clock, such as network software, other hardware, application software, operating systems, or communications software. Therefore: *Agencies MUST test ALL their PC's in their environment regardless of the OEM stated compliance status.*

Big Buy 1994		
Description	Type	Y2K Compliant?
NEC 66 Mhz	PC	No
Compaq Proliant 2000-5/66-4200A	PC	No
Compaq Prolinea MT	PC	No
Windows 3.1	Software	Yes *

Big Buy 1995		
Description	Type	Y2K Compliant?
NEC Powermate V4100	PC	No
NEC Powermate VP 75	PC	No
Windows for Workgroups 3.11	Software	Yes *

Big Buy 1996		
Description	Type	Y2K Compliant?
NEC Powermate VE 75	PC	Yes
NEC Powermate V100	PC	Yes
HP VE2 5/75	PC	Yes
HP VL4 5/100	PC	Yes

Big Buy 1996		
Description	Type	Y2K Compliant?
HP Laser 5P	Printer	Yes
HP Laser 5si	Printer	Yes
Windows 95	Software	Yes *
Windows for Workgroups 3.11	Software	Yes *

Big Buy 1997		
Description	Type	Y2K Compliant?
Dell 5200/Gxim Base	PC	Yes
HP Vectra VL5	PC	Yes
NEC Powermate P200	PC	Yes
Compaq Armada 1510DM	Notebook PC	Yes
AST Acentia A60+	Notebook PC	Yes
Compaq Proliant 2500N	Server	Yes
HP Laserjet 5si	Printer	Yes
Windows 95	Software	Yes *
Microsoft NT 4.0	Software	Yes

* MS Windows 95, 3.11, and 3.1 - File Manager shows garbled date for year 2000 or later.

NEC <http://support.neccsdeast.com/year2000.htm>

HP <http://www.hp.com/gsy/year2000/hwstatus.html>

Compaq <http://www.compaq.com> (then search for "Year 2000")

Microsoft <http://www.mitre.org/research/cots/vendors/Microsoft.html>

http://www.microsoft.com/CIO/Articles/RELATED_Y2K_LINKS.htm

7.5 List of Embedded Systems

A number of agencies have recently requested a list of non-IT systems which should be evaluated as part of the Year 2000 project. The following is an initial list of these systems. This list will be updated as more information becomes available.

- Office Devices
 - Copying machine – paper & electronic
 - Fax machines
 - Mobile phones and pagers
 - Private branch exchanges (PBXs)
 - Personal organizers
 - Telephones
 - Telex machines
 - Voice mail and answering machines
- Facilities
 - Backup Lighting and Generators
 - Building management systems
 - Building systems
 - Car park barriers
 - Car parking systems
 - Elevators and escalators
 - Gas installations, alarms, and controls
 - Heat source – boilers, alarms and controls
 - Heating & ventilating systems
 - Heating and Ventilating Systems
 - Schedule systems for maintenance
 - Sprinkler systems
 - Waste disposal installation
 - Water & Sewerage systems
 - Water treatment installations
- Physical Security
 - Burglar and fire alarms
 - CCTV cameras/monitors
 - Electric locks
 - Fire Control alarms, devices and systems
 - Photo surveillance equipment
 - Security systems and cameras
- Health Care
 - Medical & patient attached equipment
- Public Safety
 - Traffic control systems
- Miscellaneous
 - Radios
 - Service equipment
 - Time recording machines & devices
 - Vehicle management system
 - Remote sensing equipment
 - Global positioning devices
 - Motor vehicle microprocessors

Reference:

<http://www.fmsolutions.force9.co.uk/year2000/TrustY2K.html#app4>

Appendix A

Sample Project Plan

Sample Year 2000 Project Plan for Agency X

September 11, 1997

Concurrence:

Project Manager

(MIS Manager)

(Business Manager)

(Agency Head)

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1.0 Summary

1.1 Scope

This plan describes the organization, methods, and processes which Agency X will use to achieve Year 2000 compliance. This plan will address:

- all IT systems, including end user desktop applications and LANs.
- all non-IT systems, such as PBX, office access control, other appropriate for agency

1.2 Objectives

(Include a brief statement of the mission of the agency, its business processes, and which services absolutely must not fail.)

1.3 Updates

This plan will be updated during performance of the project at approximately 3-6 month intervals. At this time, the following issues remain open:

- XXXXX
- XXXXX
-

2.0 Project Organization

2.1 Accountability

The Year 2000 project will have the lines of accountability and communication with organizations as shown in the following organization chart.

(Insert an org chart showing where the project fits into the agency. In particular, show lines to senior management and to business experts. Also show significant external agencies the project team will be interfacing with.)

2.2 Project Team

The project team includes ...

(If the project team is large enough, insert an org chart which lists name and team role of each team member.)

(In any event, identify team members and indicate who is responsible for the following roles: Project Manager, Awareness/Communications, Remediation Team Leads, Desk Top Lead, Testing, Configuration Management, 3rd Party Software Management, External Interface Management, Non-IT Compliance Management, Contingency Planning. Note: for small teams, a single person will wear more than one hat.)

(Include additional info as appropriate, e.g., vendor relationships for vendors on the project team.)

(Include any special strategies for coping with known or anticipated staffing problems.)

2.3 Meetings, Reports, and Reviews

(Describe the regularly scheduled meetings, status reports, and reviews for the project, e.g., purpose, who is responsible for organizing, who will attend, interval.)

2.4

(Use additional sections as necessary to describe additional issues, e.g., signature authorities, shifts, offices.)

3.0 Project Strategies

3.1 Awareness/Communications

(Strong communications is a critical success factor for any Year 2000 effort. Describe how awareness will be maintained throughout the project.)

3.2 Mainframe/Client-Server Systems

3.2.1 System Compliance Strategy

(Insert a table like the following.)

<u>System</u>	<u>Priority</u>	<u>Compliance Status</u>	<u>Compliance Strategy</u>	<u>Resources</u>	<u>Deployment Date</u>
System X	Mission Critical	Not compliant	Remediate	50% in-house; 50% Vendor X	July 1998
System Y	Essential	Not compliant	Replace with System Z		
System Z	Other	Compliant	NA		

3.2.2 Remediation Techniques

(Describe conditions when project team will use full expansion, windowing, or other technique.)

3.2.3 Standards/Guidelines

(Describe general standards, e.g., formats, standard date routines.)

3.2.4 Configuration Management

(Describe how remediation changes will be made vis a vis normal maintenance mods and special CM tools)

3.2.5 Testing

(Describe type of testing, e.g., regression, performance, stress, etc., how testing will be performed, e.g., separate team, location, phases, how test scripts will be developed, how problems will be tracked & retested, test tools.)

(Also describe standard Y2K tests, e.g., Dec 31, 1997-Jan 1, 2000 roll-over, Feb 28 - Feb 29, 2000 roll-over; Feb 29 - Mar 1, 2000 roll-over.)

3.3 End-User Desk-Top Applications

(Describe how these will be made compliant. Include end-user and MIS roles and responsibilities.)

3.4 Third Party Software/Hardware

(Describe how these will be tracked and made compliant. Include a table like the following. If the table is very long, move it to an appendix.)

<u>Software/ Hardware</u>	<u>Vendor</u>	<u>Compliance Status</u>	<u>Source of Status</u>	<u>Open Issues</u>	<u>Deployment Date</u>

3.5 External Interfaces

(Describe how these will be tracked and made compliant. Include a table like the following. If the table is very long, move it to an appendix.)

<u>Interface</u>	<u>External Agencies</u>	<u>Owner Agency (responsible for documenting for others)</u>	<u>Deployment Date</u>

3.6 Non-IT Devices

(Describe how these will be tracked and made compliant. Include a table like the following. If the table is very long, move it to an appendix.)

<u>Device</u>	<u>Vendor</u>	<u>Compliance Status</u>	<u>Source of Status</u>	<u>Open Issues</u>	<u>Deployment Date</u>

3.7 Contingency Planning

(Describe what contingency plans are required. Use a table for high-level look.)

<u>System</u>	<u>Service</u>	<u>Staff Lead (responsible for documenting)</u>	<u>Status</u>

4.0 Master Schedule

(Include a Gantt chart showing tasks and dates. You may also want to include a statement on assumptions, dependencies, and constraints)

5.0 Resources

(Describe additional resources required. E.g., staff, office space, equipment, tools, DASD.)

6.0 Costs

(Insert information like the Y2K spending plan turned into Budget Bureau.)

7.0 Risk Management

(Describe how/how often you will be performing risk assessments. Include a table showing the known risks)

<u>Risk</u>	<u>Priority</u>	<u>Probability</u>	<u>Mitigation Activity</u>	<u>Open Issues</u>

Appendix a Related Documents

(List related documentation, such as inventory/assessment documents, specific system remediation project plans, test plans, etc.)

Appendix b Contact List

(Insert a table listing names & phone numbers for team members, key agency staff, etc.)

Appendix c ...

(Add additional appendices as appropriate, e.g., forms, detailed discussions of key issues, large tables.)

Appendix B

Agency Contact List

Secretariat	Agency	Agency Contact	Phone #	E-Mail Address
A&F	Admin. Ag. for Dev. Disabilities	Dan Shannon	727-6374	
A&F	Admin. Law Appeal	Pat English	727-7060	Pat.English@users@aia
A&F	Appellate Tax Board	Marc DeFranciso	727-3100X125	Mark.DeFranciso@users@atb
A&F	Budget Bureau	Tom Smith	727-2081 x418	Tom.Smith@systems@baf
A&F	Bureau of State Office Bldg.	George Young	727-1100 x521	George.Young@osb@bsb
A&F	Capital Planning & Operations	Bob Ryan	727-4006 x348	Robert.Ryan@cla@dod
A&F	Central Business Office	Dan Folloni	973-0982	Internet:Dan.Folloni@state.ma.us
A&F	Civil Service Comm.	Aris Gonnella	727-2293	Aris.Gonnella@administration@labor
A&F	Comm. Against Discrimination	Franklin Young	727-3990 x264	Internet:Franklin.Young@state.ma.us
A&F	Dept. of Revenue	Anthony DelGrosso	887-5355	Anthony.Delgrosso@state.ma.us
A&F	Dept. of Veterans Services	Hyun Yoo	727-3578x111	Hyan.Yoo@Admin@vet
A&F	Div. of Human Resources	John Jesenski	727-3555X453	John.Jesenski@exec.dpa
A&F	EO of Admin & Finance	Dan Folloni	973-0982	Internet:Dan.Folloni@state.ma.us
A&F	Group Insurance Commission	Lisa Lee	727-2310	Lisa.Lee@admin@groups2
A&F	Information Technology Division	Marcia King	973-0711	Marcia.King@planning@itd.bos
A&F	Mass. Office on Disability	Barbara Lybarger	727-7440	Barbara.Lybarger@users@oha
A&F	Office of Dispute Resolution	Mike Sysmanski	727-2224	Mike.Sysmanski@modr@modr
A&F	Office of Employee Relations	Dave Webster	727-3555X453	Dave.Webster@exec.dpa
A&F	Operational Services Division	William Smith	727-7500x302	William.Smith@omis@osd
A&F	Public Emp's Retirement Board	Paul Laliberte	727-9380	paul.laliberte@PERA Admin Office@PER
A&F	Teacher's Retire Board	Joe Champa	727-3661	Joseph.champa@trb.state.ma.us
Const Officers	Attorney General	MaryClare Querzoli	727-2200	
Const Officers	Auditor's Office	Paul McLaughlin	727-6200	Paul.McLaughlin@sao@state.ma.us
Const Officers	Secretary of State	Judy Langone/ Kevin Thibault	727-2600x11	Judy.Langone@cur@sosensl
Const Officers	Treasurer & Receiver General	Peter Navaro	367-3900 x 667	Peter.Navaro@state.ma.us
Consumer Aff	Alcol. Bev. Control Comm.	Linda Jones	727-3040	
Consumer Aff	Board of Reg. in Medicine	Gary Brown	727-3086	Gary.Brown@rms@borim
Consumer Aff	Cable TV Commission	Steven Whittredge	727-6925	Steven.Whittredge@A&P@ctv

Secretariat	Agency	Agency Contact	Phone #	E-Mail Address
Consumer Aff	Dept. of Public Utilities	Gail Soares	305-3692	Gail Soares@executive@dpu
Consumer Aff	Div. of Banks	George McCarthy	727-3145 x371	George McCarthy@sys@dob
Consumer Aff	Div. of Insurance	Theresa Sacco	521-7471	Theresa Sacco@mis@doi
Consumer Aff	Div. of Registration	Timothy Healy	727-3056	Timothy Healy@admin@org
Consumer Aff	Div. of Standards	Mary DeYoung	727-3481	Mary DeYoung@std@sca
Consumer Aff	Off. of Cons. Aff. & Business Reg's	John Shontell	727-1837X433	John Shontell@asu@sca
Consumer Aff	Office of Victim Assistance	Mark Spezzafero	727-9745	
Consumer Aff	State Racing Commission	Joe VanDeventer	727-2581	Joseph VanDeventer@Home Office@src
Econ Devel	Dept. of Economic Development	Joe Galluccio	727-8380	Joe Galluccio@users@sea
Econ Devel	Div. of Energy Resources	Andrew Grossman	727-3230 x109	Andrew Grossman@fiscal@ene
Econ Devel	Mass. Finance Development Agency	Sheila Parker	727-8257	Sheila Parker@mis@mec
Econ Devel	Office of Film	Kim Hartford	973-8812	Kim Hartford@users@mafilm
Econ Devel	Office of International Trade	Elizabeth Bowman	367-1830	
Econ Devel	Office of Travel & Tourism	Martin Kaye	727-3201	Martin Kaye@users@mott
Econ Devel	SOMBA	David Villeneuve	727-8692	David Villeneuve@sysuser@somba
Education	Dept. of Education	Greg Nadeau	388-3300 x729	Gregory Nadeau@users@eoe
Elder Affair	EO Elder Affairs	Tim Regan	727-7750 x505	Tim Regan@fiscal@eld
Environ Affair	Dept. of Environ. Management	Mike Ridge	727-3180 x520	Mike Ridge@state.ma.us
Environ Affair	Dept. of Environmental Protection	James Kelly	617-292-5839	James Kelly@MIS@DEP Boston
Environ Affair	Dept. of Food & Agriculture	Lee Corte-Real	727-3020 X1126	lcorte-real@state.ma.us
Environ Affair	EO of Environ Affairs	TBD	727-5227 x311	
Environ Affair	Dept. of Fish & Wild. Envir. Law Enforce	Charlie Anderson	508-282-0308 x333	Charlie Anderson@dmf@we
Environ Affair	Low Level Radio Waste Mgt Bd	Karen Middleton	727-6018	Karen Middleton@pollution@eoea
Environ Affair	Metropolitan District Commission	Dave Robbins	727-4859	David Robbins@mis@mco
Exec Office	Governor's Office	Dan Folloni	973-0982	Internet:Dan.Folloni@state.ma.us
Exec Office	Inspector General	Dan Ahern	727-9140	
Exec Office	Lt. Governor's Office	Dan Folloni	973-0982	Internet:Dan.Folloni@state.ma.us
Exec Office	Governor's Council	Dan Folloni	973-0982	Internet:Dan.Folloni@state.ma.us
General Court	House of Representatives	Jim Buckley	722-2050	James Buckley@his@MAHouse
General Court	Legislative Data Processing	John Horan		

Secretariat	Agency	Agency Contact	Phone #	E-Mail Address
General Court	Senate	Jim Proctor	722-2000	James.Proctor@senate.state.ma.us
General Court	Senate Post Audit Committee	Angus McQuillan	722-1555	
HHS	Comm. for the Blind	Brian Fore	800-392-8450	Brian.Fore@systems@mcbb
HHS	Comm. for the Deaf & Hearing	John Dunleavy	800-439-0183	john.dunleavy@amd@mcdd
HHS	Dept. of Mental Health	Larry Hookey	727-5500 x272	Larry.Hookey@dmh@dmh
HHS	Dept. of Mental Retardation	Bob Trombly	624-7866	Internet:Bob.Trombly@state.ma.us
HHS	Dept. of Public Health	Marge MacEvitt	624-5863	Marge.MacEvitt@systems@dph.ens
HHS	Dept. of Social Services	Brad Leonard	727-3171 x265	Patricia.Wada@daf@dss.central
HHS	Dept. of Trans. Assistance	Lynne Mooney	348-8408	Lynne.Mooney@DTA.state.ma.us
HHS	Dept. of Youth Services	Scott Taberner	727-7575	Scott.Taberner@Users_Bsln@DYS
HHS	Div. of Health Care Finance	Frank Melle	988-3272	Frank.Melle@hig@hcfp
HHS	Div. of Medical Assist.	Sharon Wright	210-5217	SWright@NT.DMA.state.ma.us
HHS	DMH, Southeastern	Sylvia Killion	727-7905 x231	Sylvia.Killion@systems@dmh.broc
HHS	EO of HHS	Jack Hornfeldt	727-7600 x508	Jack.Hornfeldt@executive@eohhs
HHS	Mass. Rehabilitation Comm.	John Donnelly	204-3821	John.Donnelly@sys@mrc.compaq.1
HHS	Office for Refugees & Immigrants	Fred Koed	727-7888 X310	Fred=Koed%Users%ORI@im.state.ma.us
HHS	Office of Child Care Services	Dan Walsh	727-8900 x116	Dan.Walsh@fld_op_central@ofc
HHS	Soldiers Home-Chelsea	Stan Jankowski	884-5660	Stan.Jankowski@administration@soldrschelsea
HHS	Soldiers Home-Holyoke	Bob LeFaive	413-532-9475 x525	Bob.L.LeFaive@finance@hsh
Higher Ed	Board of Higher Education	Jack Maguire	660-4887	Jack.Maguire@sys@rgt
Higher Ed	Bridgewater State College	Tamara Anderson	508-697-1236	
Higher Ed	Bristol Comm. College	Stephen Vieira	508-678-2811x2412	
Higher Ed	Bunker Hill Comm. College	Judith Oleks	228-2485	
Higher Ed	Fitchburg State College	Roy Hall	508-665-3158	
Higher Ed	Framingham State College	John Horrigan	626-4580	
Higher Ed	Greenfield Comm. College	Sylvia Carey	413-774-3131	
Higher Ed	Higher Ed Site Group	Steve Vieira	508-678-2811 x2412	
Higher Ed	Holyoke Comm. College	Nancy Eddy	413-552-2800	
Higher Ed	Mass. College of Art	Laura Chmielecki	232-1555	Lchmielecki@massart.edu
Higher Ed	Mass. Hospital School	Steven Cash	828-2440	

Secretariat	Agency	Agency Contact	Phone #	E-Mail Address
Higher Ed	Mass. Maritime Academy	Brian Churchill	508-330-5070	
Higher Ed	Massosoit Comm. College	Colin Maron	508-568-9100x1130	
Higher Ed	Middlesex Comm. College	Vincent Funaro	508-656-3301	
Higher Ed	Mt. Wachusett Comm. Coll.	Jane Custowski	508-632-6600	
Higher Ed	North Adams State College	Thomas Jones	413-662-5247	
Higher Ed	Northern Essex Comm College	Thomas Fallon	508-374-3866	
Higher Ed	Springfield Tech. Comm. Coll	Mike Korzec	413-781-7822	
Higher Ed	UMass - Boston	Charles Boland	287-5205	
Higher Ed	UMass - Dartmouth	Donna Massano	508-999-8043	
Higher Ed	UMass - Lowell	Nancy Fowler	508-934-3605	
Higher Ed	UMass, Amherst	John Dubach	413-545-1955	
Higher Ed	UMass, Central Admin Services	Peter Roberts	413-587-2076	Internet: PRoberts@massp.edu
Higher Ed	Westfield State College	Barry Murphy	413-572-5264	
Higher Ed	Worcester State College	Roger Flahive	508-793-8063	
Housing	Canadian French Cultural Comm.	John Kupchaunis	727-7147 x228	John.Kupchaunis@is@eocd
Housing	Comm. Econ. Dev. Assist. Corp	Karen Kelly	727-5944	
Housing	Comm. on Indian Affairs	John Kupchaunis	727-7147 x228	John.Kupchaunis@is@eocd
Housing	Community Dev. Finance Corp.	Adam K. Pearle	482-9141 x233	Akpearle@aol.com
Housing	Dept. of Housing & Com Dev.	John Kupchaunis	727-7147 x228	John.Kupchaunis@is@eocd
Housing	Manufactured Homes Commission	John Kupchaunis	727-7147 x228	John.Kupchaunis@is@eocd
Housing	Mass. Housing Finance Agency	David O'Connor	854-1738	Internet: docconnor@mhfa.com
Housing	Mass. Housing Partnership Fund	Scott MacIntyre	338-7868	Smacintyre@mhpfund.com
Ind Agency	Board of Library Commission	Robert Maier	267-9400	Robert.Maier@mlsmtabridge@x.400@state.ma.us
Ind Agency	Campaign & Political Finance	Margert Muse	727-8352	
Ind Agency	Committee for Public Counsel	Verlon Moore	482-6212	
Ind Agency	DA Association	Brian Peek	723-0642	Brian.Peek@state.ma.us
Ind Agency	Disabled Persons Protection	Yasuf Karacaglu	727-6465 x135	
Ind Agency	Fernald School	Dennis Warren	894-3600 x2464	Internet:Dennis.Warren@state.ma.us
Ind Agency	Finchold Library	Susan Edmonds	727-7456	Susan.Edmonds@lib@osd
Ind Agency	Lottery Commission	Rich Finocchio	849-5585	
Ind Agency	Mass. Bay Trans. Authority	Sandi Padellaro	222-1907	sip@totalquality.com

Secretariat	Agency	Agency Contact	Phone #	E-Mail Address
Ind Agency	Mass. Convention Center Authority	Gwen D'Amico	954-2150	gdamico@jbhynes.com
Ind Agency	Mass. Cultural Council	Gerry Flood	727-3668x330	gerry@arl.state.ma.us
Ind Agency	Mass. Education Financing Author.	Dan Duffy	261-9760	
Ind Agency	Mass. Health & Ed. Facilities Author.	David MacKenzie	737-8377	
Ind Agency	Mass. Port Authority	Phyllis Daigle	946-4462	Internet:pdaigle@massport.com
Ind Agency	Mass. Turnpike Authority	Ray Carson	630-7411	
Ind Agency	Mass. Water Resources Authority	Robert Regan	241-6247	Internet: RRegan@ultranet.com
Ind Agency	Office of State Comptroller	Susan Foss	727-5000 x233	Susan Foss@state.ma.us
Ind Agency	State Ethics Commission	Ann Marie Quinlivan	727-0060	Internet: AnnMarie Quinlivan@state.ma.us
Judiciary	Admin Office of Trial Courts	Rich Duggan	742-8383	Internet:Rich.Duggan@state.ma.us
Judiciary	Appeals Court	Rich Duggan	742-8383	Internet:Rich.Duggan@state.ma.us
Judiciary	Board of Bar Examiners	Angele Doyle	482-4466	
Judiciary	Boston Municipal Court Dept.	Patrick J. Quirt	725-8390	
Judiciary	Cambridge District Court	Arthur Sherman		
Judiciary	Comm. on Judicial Conduct	Mark Signore	725-8050	
Judiciary	Edgartown District Court	Jayne Ruley	508-627-3751	
Judiciary	Essex County Probate Court	Mark Juknavorian	508-774-1020	
Judiciary	Essex County Superior Court	Betty Hinchion	508-744-5500	
Judiciary	Fall River Trial Court	R.M.Silva	679-8161	
Judiciary	Framingham District Court	Anthony Colonna	508-875-7461	
Judiciary	Franklin Div Probate&Family Court	Arlene Bissette	413-774-7011	
Judiciary	Greenfield District Court	Patricia Stevenson	773-3666	
Judiciary	Hamden Housing Court	Curtis Shaird	413-748-7838	
Judiciary	Hampshire County Superior Court	Nancy Foley	413-584-5810	
Judiciary	Hampshire Family Court	Mary Lynn Carroll	413-586-8500	
Judiciary	Hingham District Court	Maureen Restuccia	749-7000	
Judiciary	Holyoke District Court	Sean Kean	413-538-9710	
Judiciary	Ipswich District Court	Judge Cornetta	508-356-2681	
Judiciary	Land Court	Peter Kilbom	227-7470	
Judiciary	Lowell District Court	Chris Hart	508-459-4101	

Secretariat	Agency	Agency Contact	Phone #	E-Mail Address
Judiciary	New Bedford District Court	John Stellato	508-999-9700	
Judiciary	Office of Jury Commissioner	Brian Patterson	422-5860	
Judiciary	Palmer District Court	Constance Wlodyka	413-283-5021	
Judiciary	Plymouth County Superior Court	Delores Sullivan	508-583-8250	
Judiciary	Roxbury District Court	Judge Phillips	427-7000 x 504	
Judiciary	Stoughton District Court	Linda Siegal	344-2131 x217	
Judiciary	Superior Court Admin Office	Rich Duggan	742-8383	
Judiciary	Supreme Judicial Court	Greg Wallis	657-1172/ 725-8055	
Judiciary	Uxbridge District Court	Judge Teshoran	508-278-2454	
Judiciary	Ware District Court	Paulette Charpentier	413-967-3301	
Judiciary	West Roxbury Trial Court	Ann Khan	522-471 x221	
Judiciary	Westborough District Court	Cathy Gleason	508-366-8266 x132	
Judiciary	Woburn District Court	Charles Winchester	935-4000 x268	
Judiciary	Wrentham District Court	Diane Breau	508-384-8141	
Labor Dev	Board of Conciliation & Arbitration	Jamie Kelly	727-3466	
Labor Dev	Career Center Operations Group	Karin McCarthy	727-6641	Karin McCarthy@mic@sea
Labor Dev	Corp. for Business Work & Learning	Stacey Moran	727-8158	
Labor Dev	Dept. of Employment & Training	Dick Burke	626-6731	617-727-8014 Fax
Labor Dev	Dept. of Labor & Workforce Develop	Joan Lenihan	727-6573	Janice M. Fennell@users@eol
Labor Dev	Div. of Apprenticeship	Mike Richards	727-3486	Mike Richards@sys@lab
Labor Dev	Div. of Industrial Accidents	Brion Leary	727-4900x225	Brion Leary@Admin@DIA
Labor Dev	Div. of Labor Market Information	Dick Burke	626-6661	
Labor Dev	Div. of Occupational Safety	Mike Richards	727-3452	Mike Richards@sys@lab
Labor Dev	Joint Labor Mgmt Committee	John Hanson	617-727-9690	
Labor Dev	Labor Relations Comm	Mike Wallace	727-3505	
Public Safety	Architectural Access Board	Deborah Ryan	727-0660	Deborah Ryan@users@aab
Public Safety	Board of Bldg. Regulations	Charlie Hadley	727-3200 x622	charles.hadley-eps@state.ma.us
Public Safety	Bureau of Spec. Investigations	Maureen Molloy	727-6950 X415	Maureen Molloy@users@bsi
Public Safety	Chief Medical Examiner	Roger Mascal	267-6767	Roger Mascal@users.cme@eops
Public Safety	Criminal History Systems Board	Marlin Censullo	660-4800	Internet:Marlin_Censullo@chs.state.ma.us

Secretariat	Agency	Agency Contact	Phone #	E-Mail Address
Public Safety	Criminal Justice Programs Division	Phil Welton	727-6300 x345	Phil Welton@Users.CCJ@EOPS
Public Safety	Criminal Justice Training Coun.	Jack Cole	727-7827	Internet Sarah@mojo.org
Public Safety	Dept. of Corrections	Daniel Buslovich	727-2106x323	Dan@doc.state.ma.us
Public Safety	Dept. of Fire Services	Steve McGrath	508-567-3100	Steve McGrath@mis@dfs.state.ma.us
Public Safety	Dept. of Public Safety	Kosta Spanos	727-7775	kosta.spanos-eps@state.ma.us
Public Safety	EO of Public Safety	Kosta Spanos	727-7775	kosta.spanos-eps@state.ma.us
Public Safety	Gov's Highway Safety Board	Kosta Spanos	727-7775	kosta.spanos-eps@state.ma.us
Public Safety	Mass. Emergency Management	Richard Wentzel	508-820-1407	Rich Wentzel@systems@merma
Public Safety	Merit Rating Board	Robert Liberatore	267-3636	Robert Liberatore@GWprocy@rmv.mailgate
Public Safety	Military Division	Cap. John Debardeleben	944-0500	
Public Safety	Parole Board	Sallyann Sweeney	727-3271 x110	Sallyann Sweeney@planning@parole
Public Safety	Registry of Motor Vehicles	Bob Liberatore		
Public Safety	State Police	Lt. David Snow	508-820-2331	
Trans&Constr	Central Transportation Planning	John Blies	973-7692	John Blies@users@dss.developers
Trans&Constr	EO of Transportation/Construction	Amornrut Hampukdipatia	973-8165	Amornrut.Hampukdipatia@state.ma.us
Trans&Constr	Mass. Aeronautics Comm	Robert Mallard	973-8886	Bob Mallard@administration@aeronautics
Trans&Constr	Mass. Highways	Russ Grant	973-7692	Russel Grant@mis@dpw_bos

Appendix C

Year 2000 Testing and MITC

According to a number of Year 2000 experts, testing is probably the most important phase of an organization's Year 2000 project and will account for between 35 and 60% of the project's schedule and resources (staff and equipment). In fact, here in Massachusetts, both the Department of Employment and Training and the Department of Revenue have borne this out with their estimates of 50% of their project's time and dollars estimated for Year 2000 testing.

Testing should be a process that starts early in a Year 2000 project and continues throughout the life of the project. Year 2000 testing is far more complex than typical application development testing since there are so many layers of testing required. The Year 2000 problem affects everything – operating systems, compilers, form generators, report writers, data servers, and vendor-supplied components, such as libraries and toolkits. Testing must include establishment of software baselines, testing that converted software still performs normally using current dates, and testing that converted software performs normally using future 21st century dates. In general, changing a production system's current date for testing is impossible, therefore, for many systems, testing will have to be done in a separate environment. This requires additional space, additional hardware, firmware, and software, and additional time. If any of the hardware, operating systems or compilers, for example, need upgrading for Year 2000, then testing also needs to be very carefully coordinated among all the components. Furthermore, if remediation involves date expansion, more storage space may be required and historical data may also need to be converted. And, all this must be done while continuing to run and maintain the existing system in the production environment!

The ITD Data Center at the Massachusetts Information Technology Center (MITC) in Chelsea is gearing up for Year 2000 testing. The staff in Chelsea are preparing to help agencies with their testing. However, in order for them to best serve their customers, they need as much advance notice as possible and as much information from the agencies as is available. This article will help the agencies determine if they will need help from MITC and what the agencies can do to ensure a successful experience with MITC.

Who can benefit from the MITC resources?

If an agency has mainframe applications and is an existing ITD mainframe customer, then they will need to take advantage of the MITC resources.

Why would an agency need the resources of MITC?

In order to test a mainframe application, agencies will need a separate Year 2000 test environment that mimics the production environment. MITC is in the process now of setting one up. MITC has also upgraded current versions of CICS and Cobol, and other software, to Year 2000 compliant versions. Agencies will need to get the necessary information to convert their own systems.

What can an agency do now to prepare for Y2K testing at MITC?

There are a number of things an agency can do now to prepare for Y2K testing. Probably the most important is to Find the source code! Without the latest version of source code, agencies will be unable to create Y2K-compliant executable software. They will need to make sure that the source code they have matches the current executable code. If not, they will need additional time to recreate their program(s).

If an agency is using back level releases of compilers, operating systems, or other software, especially releases which are no longer supported by MITC, they will need to upgrade to a supported release. This also will add to the time needed to become Y2K compliant, but is something that agencies can be doing now.

When should an agency notify MITC of their needs for Y2K testing?

Agencies will be getting a letter shortly from MITC requesting current and future disk space requirements for their systems, including Y2K initiatives, for the period June 1998 through June 1999. Agencies should return these forms as soon as possible. If an acquisition for additional disk space is needed, a few months lead time is necessary.

Any other requests for Y2K testing should be forwarded to MITC as close to February 28, 1998 as possible.

What information should the agency provide to MITC with their request for services?

When an agency makes a request for Y2K testing help, they should include the answer to as many of the following questions as possible:

What application is being tested?

What is the system environment? (e.g., database, VSAM, CICS, COMPLETE)

Is disk space needed? If so, how much?

Are tapes needed?

What languages are being used?

Are there any data security issues?

Are there any data storage issues?

What are the database and operating system requirements?

What is the schedule for testing?

Providing copies of documented Y2K project plans and/or test plans will also help MITC to better serve their customers.

The ITD Data Center staff at MITC is preparing for the Year 2000 testing. By April 1998, they expect to have a fully active Year 2000 test environment operational and ready for their customers.

PC BIOS and The Year 2000

A White Paper

By

Commonwealth of Massachusetts, Information Technology Division

Year 2000 Program Management Office

February 3, 1998

An organization attempting to achieve Year 2000 compliance must evaluate the Year 2000 readiness of its personal computers (PCs), in addition to its mainframe and mini-computer platforms and its embedded systems. This includes not only an assessment of the software and applications running on the PCs, but the PC hardware and operating systems. This paper focuses on the PC Year 2000 system date problem, *i.e.*, the date and time stored and maintained by the hardware. Topics discussed include a description of the impact on organizations and people if the problem is not corrected, ways to determine if a PC has a Year 2000 problem at the hardware level, and some suggestions on ways to correct the problem.

DEFINITION OF THE YEAR 2000 PC BIOS PROBLEM

The PC Year 2000 system date problem is frequently referred to as the PC BIOS problem. In fact, it might be better called the PC BIOS/RTC problem. The BIOS or Basic Input/Output System is firmware using read-only memory (ROM) that provides an interface between the PC hardware and the operating system. The RTC or Real-Time Clock is a battery-powered chip on the PC motherboard that stores and maintains time and date information. Unfortunately, it stores year values using 2 digits. The BIOS is responsible for storing the century value. Frequently it stores the century value in the component containing the RTC.

At system start-up, the PC's operating system calls the BIOS to get the current date and time. The BIOS retrieves the information from the RTC and supplies the century. The PC's operating system then typically sets its system clock based on the information from the BIOS. For example, DOS converts the date to days since January 1, 1980 and then maintains this clock as long as the PC is powered on. Similarly, most other applications call the BIOS to retrieve date and time information.

Year 2000 problems occur when the BIOS fails to store, incorrectly stores, or fails to read the century value. The BIOS for many older PCs only reads the last two digits and assumes the first two are "19". In other cases, a PC will correctly store and read the century date but will not reset the century value in response to a RTC century roll-over. In particular, if the PC is powered off during the transition to 2000, the RTC may correctly rollover but the BIOS will not update the previously stored century value "19". Note that each of these conditions will result in DOS operating system initializing its system year to 1980.

IMPACT OF NOT CORRECTING THE PROBLEM

The types of potential problems which could result from not correcting a PC's system date range from minor to severe depending upon how the organization uses the PC.

- Files that are created and/or modified will be date-stamped with the wrong date. This impacts versioning and sorting the files in a list. Additionally, if the files are used for legal purposes, incorrect dates may have a more serious impact.
- Erroneous processing. Many PC applications use the system date for processing. For applications that do more than print the current date on reports, that is, applications that perform calculations using the current system date or perform sort functions using the current system date, erroneous system dates pose a serious problem. For example, a small spreadsheet application that calculates interest on a loan based on the time between the previous payment (say, in 1999) and the current system date (say in 2000) will compute the time to be a negative number.

Organizations must consider how a PC is used when assessing it for Year 2000 compliance.

DETERMINING IF THERE IS A Y2K PROBLEM

A common misconception is that if a PC is new (purchased within the past 2 years), then it must be Year 2000 compliant. That is not necessarily the case. According to a study done by Greenwich Mean Time, a company specializing in Year 2000 issues, "79% of pre-1997 BIOS chips could not rollover from 1999 to 2000 and 14% did not know the year 2000 was a leap year." Therefore, it is strongly suggested that organizations inspect every PC to ensure compliance.

There are several ways to determine if a PC's BIOS will survive the turn of the century.

- Check with the PC vendor. This method is perhaps the easiest, but, unfortunately, not necessarily the most reliable. PC makers use multiple chip suppliers, sometimes even in the same model machines. Therefore, simply contacting the vendor about a specific model may not be sufficient. However, if that is the approach of choice, PC owners can often get Year 2000 BIOS compliance information by calling or writing the maker, or by accessing the maker's web site.
- Perform a manual test of the BIOS/RTC. A very simple procedure can be done to verify the compliance of any PC. This requires performing the following tests;
 - Test if the system clock can be set for dates with a century value of "20".
 - Test if the system clock will correctly "roll-over" to the year 2000 if the PC is powered on during the transition.
 - Test if the system clock will correctly "roll-over" to the year 2000 if the PC is powered off during the transition.
 - Test if the system clock can retain a century value of "20" after it has been powered down.
 - Test if the system clock correctly identifies the year 2000 as a leap year.

More extensive tests can also be conducted which will verify time-stamps, sorting, and clock updating by the operating system. Several web sites have good descriptions of how to perform these tests, including:

<http://www.irm.state.ny.us/yr2000/pccheck.htm>

<http://www.mitre.org/research/cots/TEST.html>

- Use a tool to test the BIOS. There are several easy-to-use compliance checker applications available on the Web. These tools are downloadable and generally free for not-for-profit use. Five of these tools, recommended by Mitre Corp. are available at their web site:

http://www.mitre.org/research/cots/COMPLIANT_BIOS.html

A word of caution: be sure to disconnect the PC from the network and use a bootable floppy for performing any Year 2000 testing. Booting from a floppy is necessary to insure programs automatically loaded by the operating system do not accidentally start and to avoid an inadvertent corruption of the hard drive during testing.

CORRECTING A Y2K BIOS PROBLEM

The method selected to correct the Year 2000 BIOS problem should be determined based on the type of problem and how the PC is used.

- The BIOS/RTC cannot roll over correctly and cannot be updated from the OS. Solution options are:
 - Install a PC BIOS board to correct the error. Cost is about \$100.
 - Replace the PC.
 - Ensure the PC is only used for purposes that have no date sensitivities.
- The BIOS/RTC can support the century rollover, but the BIOS cannot set it properly. Solution options are:
 - If the BIOS uses Flash memory and the manufacturer has an upgrade, then upgrade the flash BIOS. **CAUTION: THIS SHOULD ONLY BE DONE BY A PROPERLY TRAINED TECHNICIAN.** For more information, see:
<http://www.mitre.org/research/cots/FLASHBIOS.html>
 - Install an operating system patch or small resident utility that will correct the century value. These, like the software available for testing the BIOS, are posted on the Web and can be

downloaded for free for not-for-profit uses. A list of five of these products is available at the Mitre Corp. web site:

http://www.mitre.org/research/cots/COMPLIANT_BIOS.html

- Upgrade the operating system to Windows 98 or NT (4.0 or better) which will correct the error.
- The BIOS/RTC can roll over correctly only if the PC is powered on during the transition to January 1, 2000. Solution options are:
 - Manually reset the system clock as the first activity after powering up the PC for the first time after the transition to 2000. This is the preferred and least risky of the two options for this BIOS/RTC problem type.
 - Leave the PC powered up over the transition to 2000.

OTHER CONSIDERATIONS

PC compliance does not end with a compliant hardware. Organizations must also verify the operating systems, third-party software, and end-user applications (or customizations to third-party software) are also Year 2000 compliant.

References:

- (1) "Will My PC handle dates in the year 2000 Correctly?", Intel.
[http://support.intel.com/support/year2000/assess.htm#Role of the BIOS \(Basic Input Output System\)](http://support.intel.com/support/year2000/assess.htm#Role of the BIOS (Basic Input Output System))
- (2) "The Century Rollover and the PC System Date" by Pete Woytovech, Senior Programmer, Dell BIOS Development; September 1996. http://www.dell.com/r&d/vectors/3/v3_cent.htm
- (3) "Half of all new PCs fail 2000 BIOS test"; Computer Weekly; May 22, 1997.
http://www.computerweekly.co.uk/news/22_5_97/08598503239/A.html
- (4) Mitre Corporation, Year 2000 Homepage. <http://www.mitre.org/research/y2k/>
- (5) State of New York, Year 2000 Homepage. <http://www.irm.state.ny.us/yr2000>
- (6) "BIOS Boards", Y2K Links Database Newsletter. (Note that there are more BIOS board vendors than the 2 listed at this site.) <http://www.y2klinks.com/news/lookbios.htm>

Commonwealth of Massachusetts - Year 2000 Vendor Compliance

To: *Vendor Contact*

Subject: Year 2000 Compliance

The Year 2000 computer systems challenge has been well documented and widely publicized. As you may already know, computer-based system applications have been traditionally programmed to assume all dates are in the 20th century. As a result, these applications may stop working or give erroneous results when asked to process 21st century dates.

The Commonwealth of Massachusetts is actively addressing the Year 2000 challenge by requiring our business applications and services to be fully Year 2000 compliant. *Agency X* is contacting you and our other vendors to confirm that you are aware of the Year 2000 challenge and you are or have taken the necessary steps to ensure compliance.

Enclosed is the "Vendor Self-Assessment Certification". Please indicate the "Year 2000" compliance status of your products by completing the enclosed forms and returning them to:

Agency X
Address Line 1
Address Line 2
City, MA zip

Attn: *Agency X contact*

As an important provider to the Commonwealth, your awareness of and preparations for managing the Year 2000 compliance challenges are of vital interest to us. Your response to this letter and completion of the certificate is extremely important to the *Agency X*'s Year 2000 planning. Future procurements will be based on provider responses to this query.

If you have any questions about the enclosure, please contact *Agency X contact* at *Agency X* at 617-xxx-xxxx or via email at contact.name@.state.ma.us.

Vendor Self-Assessment Certification

Definition of Year 2000 Compliance

A device (software application, computer hardware, embedded chip, etc.) that is Year 2000 compliant accurately processes date/time data (including, but not limited to, calculating, comparing, and sequencing) from, into, and between the 20th and 21st centuries, and the years 1999 and 2000, and accurately performs leap year calculations for the year 2000 and into the 21st century. In addition:

- The device shall not end operation abnormally or provide invalid or incorrect results as a result of processing date data.
- No value for current date shall cause interruptions in normal operations of systems using the device.
- All manipulations of time-related data (dates, duration, days of week, etc.) shall produce the desired results for all valid date values within the operational date range specified for the device.
- Date elements in interfaces and data storage for the device shall permit specifying century to eliminate date ambiguity.
- For any date element represented without a century value, the device shall unambiguously determine the correct century for all manipulations involving that element. In addition interface documentation clearly describes how the correct century value is determined.
- The device shall accurately process date/time data with other Year 2000 compliant devices whenever such data is exchanged in accordance with the device's documented interface specification.

Vendor Information

Company Name: _____

Y2K Contact: _____

Address: _____

Phone: _____

E-mail Address: _____

URL for Y2K Info: _____

Product Year 2000 Compliance

Describe your products' status with regard to the "Definition of Year 2000 Compliance" on the attached sheet(s). Photocopy and attach additional sheets as necessary.

The undersigned is duly authorized to hereby certify to the attached information with respect to the supplied equipment, computer hardware, and computer software provided with specific reference to the "Definition of Year 2000 Compliance" in this document.

By: _____
(Vendor's Signature)

Date: _____

Title: _____

Print Name: _____

Commonwealth of Massachusetts - Year 2000 Vendor Compliance

Vendor: _____

NOTE: This information will be shared with all state agencies and may be posted on the Commonwealth of Massachusetts web site at www.state.ma.us/y2k.

Product	Version	Compliant? (Yes/No/Never)	If Yes, Range of Dates Product can handle	Y2K Test Information Available (Yes/No)
Recommended Compliant Product (if above product is not and will not be compliant)	Version	Date Expected	Range of Dates Product can handle	Y2K Test Information Available (Yes/No)
Comments:				

Product	Version	Compliant? (Yes/No/Never)	If Yes, Range of Dates Product can handle	Y2K Test Information Available (Yes/No)
Recommended Compliant Product (if above product is not and will not be compliant)	Version	Date Expected	Range of Dates Product can handle	Y2K Test Information Available (Yes/No)
Comments:				

Product	Version	Compliant? (Yes/No/Never)	If Yes, Range of Dates Product can handle	Y2K Test Information Available (Yes/No)
Recommended Compliant Product (if above product is not and will not be compliant)	Version	Date Expected	Range of Dates Product can handle	Y2K Test Information Available (Yes/No)
Comments:				

Product	Version	Compliant? (Yes/No/Never)	If Yes, Range of Dates Product can handle	Y2K Test Information Available (Yes/No)
Recommended Compliant Product (if above product is not and will not be compliant)	Version	Date Expected	Range of Dates Product can handle	Y2K Test Information Available (Yes/No)
Comments:				

Vendor: _____

Product	Version	Compliant? (Yes/No/Never)	If Yes, Range of Dates Product can handle	Y2K Test Information Available (Yes/No)
Recommended Compliant Product (if above product is not and will not be compliant)	Version	Date Expected	Range of Dates Product can handle	Y2K Test Information Available (Yes/No)
Comments:				

Product	Version	Compliant? (Yes/No/Never)	If Yes, Range of Dates Product can handle	Y2K Test Information Available (Yes/No)
Recommended Compliant Product (if above product is not and will not be compliant)	Version	Date Expected	Range of Dates Product can handle	Y2K Test Information Available (Yes/No)
Comments:				

Product	Version	Compliant? (Yes/No/Never)	If Yes, Range of Dates Product can handle	Y2K Test Information Available (Yes/No)
Recommended Compliant Product (if above product is not and will not be compliant)	Version	Date Expected	Range of Dates Product can handle	Y2K Test Information Available (Yes/No)
Comments:				

Product	Version	Compliant? (Yes/No/Never)	If Yes, Range of Dates Product can handle	Y2K Test Information Available (Yes/No)
Recommended Compliant Product (if above product is not and will not be compliant)	Version	Date Expected	Range of Dates Product can handle	Y2K Test Information Available (Yes/No)
Comments:				

Additional sheets may be copied and attached as needed.

[illegible]

1 of 1

as of 3/5/98

Agency X Vendor Management Compliance Actions

Page 1 of 1

COMPLIANCE ACTIONS

Vendor	Product	Decision to Buy New Product /Upgrade? (Y/N)	If Upgrade, has Interface Changed? (Y/N)	If Yes or New Product, Is Interface Spec Available?	Upgrade/ New Product Price	Date Ordered	Date Expected
Vendor1	Product1						
	Product2						
Vendor2	Product1						

As of 3/5/98

Suggested Language for letter to landlords re: Y2k Compliance of facilities embedded systems:

TO: *Landlord*

DATE: December 18, 1997

FROM: *Head of Agency X*

SUBJECT: Year 2000 Compliance

The Year 2000 is expected to present problems for many electronic systems that have date-sensitive computer chips. On January 1, 2000, many elevators, sprinkler systems, air conditioners, security systems, or any equipment that contains a date-sensitive device may not work if the system cannot recognize "00" as the year 2000. The result will be disruptive, at best.

The Commonwealth wants to ensure "uninterrupted turn-of-the-century service" by all state agencies. Because service delivery includes access to agency facilities by Commonwealth employees and citizens as well as a normal working environment for the employees, we at *Agency X* are trying to determine the Year 2000 compliance status of our facilities.

As the landlord for our offices at *address of the facility*, it is your responsibility, under the terms of our lease, to ensure that all computer-controlled facility components are Year 2000 date and time function compliant. "Computer controlled facility components" refers to software driven technology and embedded microprocessor technology. This includes, but is not limited to programmable thermostats, HVAC controllers, auxiliary elevator controllers, utility monitoring and control systems, fire detection and suppression systems, alarm systems, security systems, and any other facilities control systems utilizing microcomputer, minicomputer, or programmable logic controllers.

"Year 2000 compliant" means computer-controlled facility components that accurately process date/time data (including, but not limited to, calculating, comparing, and sequencing) from, into, and between the twentieth and twenty-first centuries, and the years 1999 and 2000 and accurately performs leap year calculations.

In order for us to ensure that Agency X's facilities and environment will continue to be accessible and comfortable for our employees and constituents, we are asking that you fill out the attached questionnaire and return it to Mr./Ms. *Y2K Coordinator* by *30 days from the above date*.

Thank you for your cooperation on this matter.

Facilities Year 2000 Checklist

System	Computer Controlled? (Y/N)	Uses Dates? (Y/N)	Year 2000 Compliant? (Y/N)	If Yes, How Verified: (L)etter from vendor (V)erbal from vendor (O)ther – please specify	If No, Date Scheduled To Be Compliant
Programmable Thermostats					
Heating, Ventilation, Air Conditioning System					
Heat Source – Boilers, alarms, controls					
Utility Monitoring & Control System					
Elevators/Escalators					
Fire/Smoke Detection and Suppression System					
Alarm System					
Building Security System					
Parking Garage Access					
Backup Lighting & Generators					
Sprinkler Systems					
Electric Locks					
Other: Please specify					

Administration & Finance

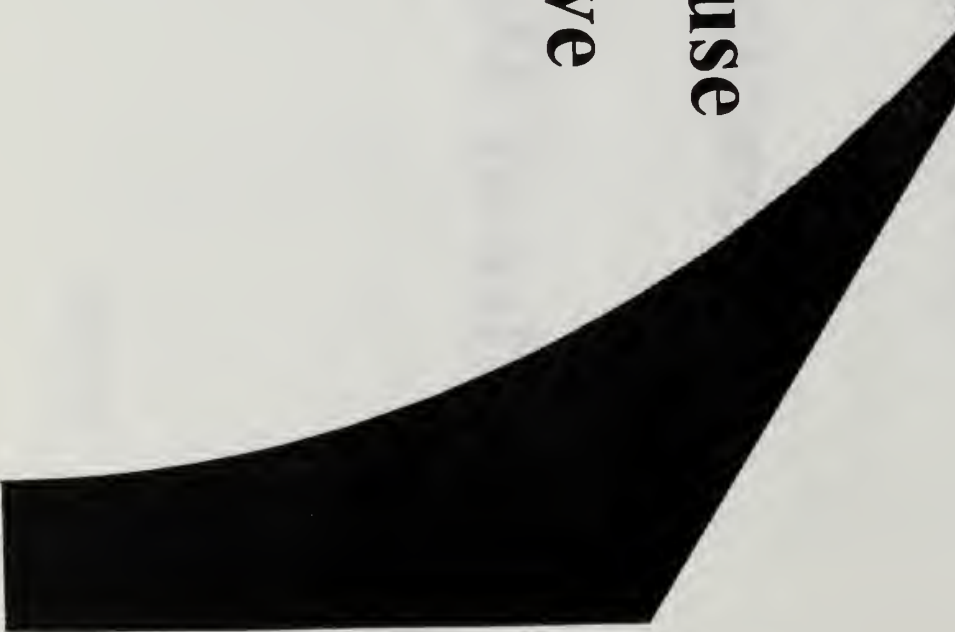
Louis Gutierrez

Director of Information Technology

Office of Management Information Systems

4/12/96

Information Technologies: Power Tools for Administration & Finance

- **Information Warehouse**
 - **The Online Imperative**
 - **Big Buy 1996**
- 

Information Warehouse Goals for Fiscal Year 1997

- **New Features**
- **New A&F Technology and
Customer Service Unit**
- **Greater Robustness**

The Online Imperative

- **E-Mail**
- **Information Warehouse**
- **FAD Spending Plans**
- **DPGS Com-PASS**
- **Document Management Workflow**
- **EOAF Intranet**
- **...**

Big Buy 1996



A Word to the Wise...

- **Review Your Older Agency Systems**
- **Start Asking NOW How Dates Are Handled**
- **Don't Get Thrown by The Year 2000**



A New World
is happening online...

EOAF.STATE.MA.US

Administration & Finance

Louis Gutierrez

Chief Information Officer

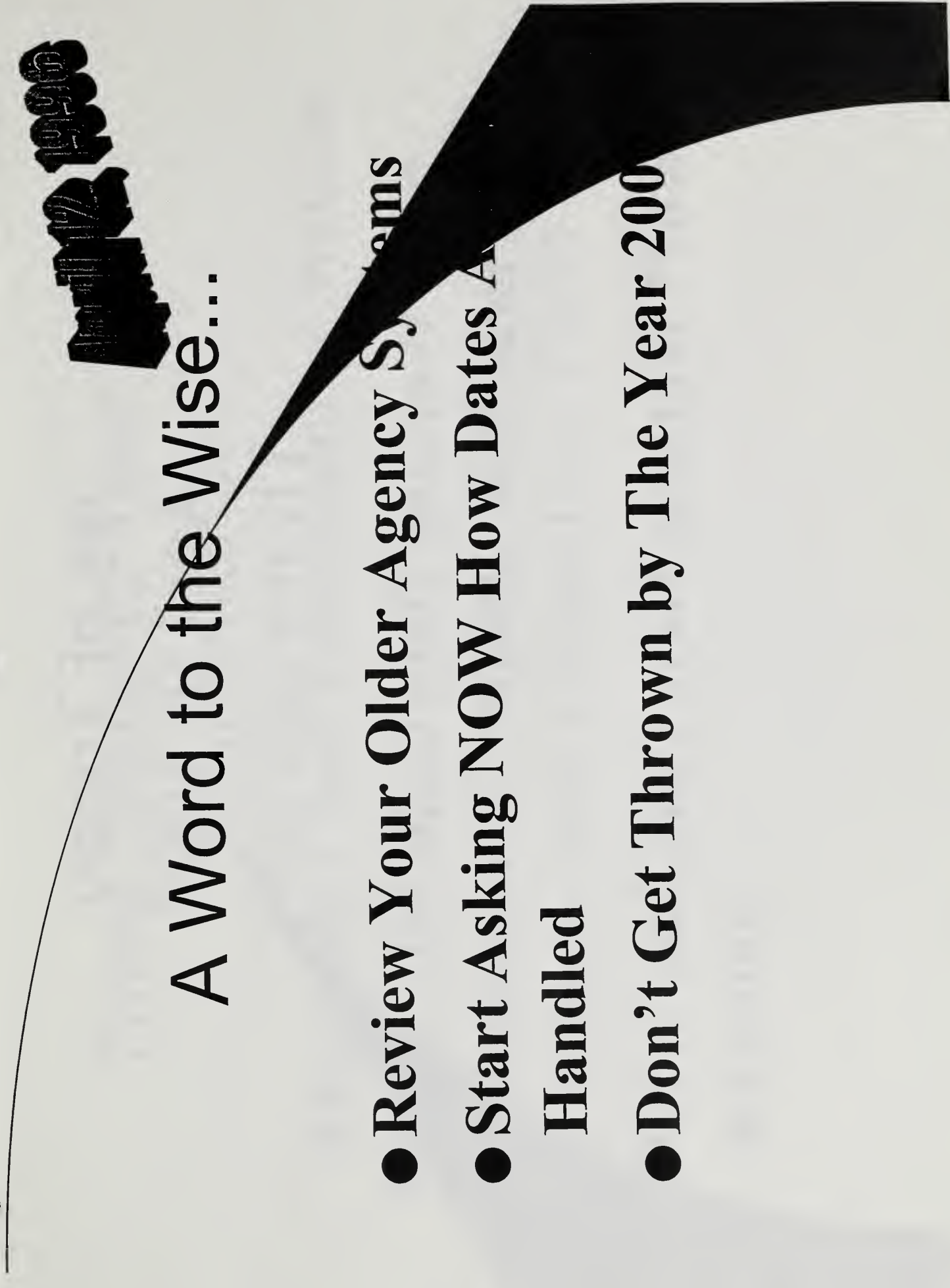
Information Technology Division

4/9/97

Close/Open FY1997/1998 Technology Topics

- Year 2000

- Big Buy 1997



A Word to the Wise...

- **Review Your Older Agency Systems**
- **Start Asking NOW How Dates Are Handled**
- **Don't Get Thrown by The Year 2000**

Start 12 1996

As of Today
April 9, 1997

There are only:

- **551 Working Days Until July 1, 1999**
(Fiscal Year 2000)

- **677 Working Days Until Jan. 1, 2000**

Three Steps to Year 2000 Compliance

- Inventory and Assessment of Systems
- Replacement or Remediation of Systems with 2-Digit Date Fields
- Testing

Big Buy 1997

